Produkte
Products

Prüfbericht - Nr.: *Test Report No.:*	**17010516 001**	**Seite 1 von 103** *Page 1 of 103*
Auftraggeber: *Client:*	**Namtai Electronic (Shenzhen) Co., Ltd.** **Gusu Industrial Estate, Xixiang, Baoan, Shenzhen** **Guangdong 518126, P.R. China**	
Gegenstand der Prüfung: *Test item:*	**Wireless SingStar Microphone Receiver**	
Bezeichnung: *Identification:*	**SLEH-00089(Receiver)**	**Serien-Nr.:** *Serial No.:* **n.a.**
Wareneingangs-Nr.: *Receipt No.:*	**163041473**	**Eingangsdatum:** *Date of receipt:* **2008-09-02**
Prüfort: *Testing location:*	**TÜV Rheinland (Guangdong) Ltd.** **EMC Laboratory** **Guangzhou Auto Market, Yuan Gang Section of Guangshan Road, Guangzhou, P.R. China** **FCC Registration No.: 833845** **Test site Industry Canada No.: 2932C-1**	
Prüfgrundlage: *Test specification:*	**FCC CFR47 Part 15: Subpart C Section 15.247** **FCC CFR47 Part 15: Subpart C Section 15.207** **FCC CFR47 Part 15: Subpart C Section 15.209** **FCC CFR47 Part 15: Subpart B Section 15.107** **FCC CFR47 Part 15: Subpart B Section 15.109** **RSS-210 Issue 7 June 2007** **RSS Gen Issue 2 June 2007** **RSS-102 Issue 2 November, 2005**	
Prüfergebnis: *Test Result:*	**Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n).** *The test item passed the test specification(s).*	
Prüflaboratorium: *Testing Laboratory:*	**TÜV Rheinland (Shenzhen) Co., Ltd.**	

geprüft/ *tested by:*			**kontrolliert/** *reviewed by:*		
2008-12-04	Winnie Hou/ Engineer		2008-12-11	Sam Lin/ Project Engineer	
Datum *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*	**Datum** *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*

Sonstiges/ *Other Aspects:*

Abkürzungen:				*Abbreviations:*			
P(ass)	=	*entspricht Prüfgrundlage*		*P(ass)*	=	*passed*	
F(ail)	=	*entspricht nicht Prüfgrundlage*		*F(ail)*	=	*failed*	
N/A	=	*nicht anwendbar*		*N/A*	=	*not applicable*	
N/T	=	*nicht getestet*		*N/T*	=	*not tested*	

TEST SUMMARY

5.1.1 ANTENNA REQUIREMENT
RESULT: Passed

5.1.2 PEAK OUTPUT POWER
RESULT: Passed

5.1.3 20DB BANDWIDTH
RESULT: Passed

5.1.4 100KHZ BANDWIDTH OF FREQUENCY BAND EDGE
RESULT: Passed

5.1.5 SPURIOUS EMISSION
RESULT: Passed

5.1.6 FREQUENCY SEPARATION
RESULT: Passed

5.1.7 NUMBER OF HOPPING FREQUENCY
RESULT: Passed

5.1.8 TIME OF OCCUPANCY
RESULT: Passed

5.1.9 PEAK POWER DENSITY
RESULT: Passed

5.1.10 RADIATED EMISSIONS
RESULT: Passed

5.1.11 RESTRICTED BANDS
RESULT: Passed

Contents

1. General Remarks

1.1 Complementary Materials

None.

2. Test Sites

2.1 Test Facilities

TÜV Rheinland (Guangdong) Ltd.
EMC Laboratory

Guangzhou Auto Market,
Yuan Gang Section of Guangshan Road,
Guangzhou, P.R. China

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Kind of Equipment	Manufacturer	Type	S/N	Calibrated until
Spurious emission and Radiated emission				
EMI Test Receiver	Rohde & Schwarz	ESCI-3	100216	2009-11-26
Spectrum Analyzer	Rohde & Schwarz	FSP30	100286	2009-08-24
Trilog-Broadband Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9168	209	2009-11-07
Double-Ridged Waveguide Horn Antenna	Rohde & Schwarz	HF906	100385	2009-08-18
Pre-amplifier	MITEQ	AFS42-00101800-25-S-42	1101599	2009-07-31
Standard Gain Horn Antenna	EMCO	3160-09	21642	N/A
Pre-amplifier	MITEQ	AFS33-18002650-30-8P-44	1108282	2009-07-31
3m Anechoic Chamber	Albatross Project GmbH	N/A	N/A	2009-04-16
Radio Test Suite				
EMI Test Receiver	Rohde & Schwarz	ESCI	100178	2009-09-27
Receiver	R&S	ESCI	100178	2009-09-27
Conducted Emission				
EMI Test Receiver	Rohde & Schwarz	ESCS30	100316	2009-03-27
Artificial Mains Network	Rohde & Schwarz	ESH2-Z5	100114	2009-03-27

2.3 Traceability

All measurement equipment calibrations are traceable to NIST or where calibration is performed outside the United States, to equivalent nationally recognized standards organizations.

2.4 Calibration

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

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements are ±3dB.

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix1 of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The TÜV Rheinland (Guangdong) Ltd. test facility located at Guangzhou Auto Market, Yuan Gang Section of Guangshan Road, Guangzhou, P.R. China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3. General Product Information

3.1 Product Function and Intended Use

The EUT is wireless microphone designed for SONY PlayStation® 2 and PlayStation® 3 for home entertainment. It operates at 2.4GHz ISM frequency band. The whole system is composes of 2 Microphones and a Receiver which contains 2 RF units, each unit can only communicate with one Microphone.

Hopping channel refer to following table, unit: MHz

2405	2407	2409	2411	2413	2415	2417	2419	2421	2423	2425	2427
2429	2431	2433	2435	2437	2439	2441	2443	2447	2449	2451	2453
2455	2457	2459	2461	2463	2465	2467	2469	2471	2473	2475	2477

Every Microphone and receive unit can only use half of frequency points in the same time.

Hopping channel for blue microphone and blue receive unit: MHz

2405	2409	2413	2417	2421	2425	2429	2433	2437
2441	2447	2451	2455	2459	2463	2467	2471	2475

Hopping channel for red microphone and red receive unit: MHz

2407	2411	2415	2419	2423	2427	2431	2435	2439
2443	2449	2453	2457	2461	2465	2469	2473	2477

For details refer to the User Manual, technical description and Circuit Diagram.

3.2 Ratings and System Details

Table 2: Rating of EUT

Kind of Equipment:	Wireless SingStar Microphone Receiver
Type Designation:	SLEH-00089(Receiver)
FCC ID	VZVWLMIC1

Table 3: Technical Specification of EUT

Technical Specification	Value
Operating Frequency band	2405 – 2477 MHz
Channel separation	2MHz
Extreme Temperature Range	5ºC to 35ºC
Operation Voltage	DC 5V (via PS3 USB port)
Modulation	FHSS, GFSK
Antenna Type	Internal Antenna, Non-User Replaceable
Antenna Gain	-2.7 dBi
RF Output Power	0.002W (3dBm)
External Ports	None
Hopping rate	58.8 times/s

3.3 Independent Operation Modes

The basic operation modes are:

A. Transmitting
   1. Low channel
   2. Middle channel
   3. High channel

B. Receiving
C. Standby
D. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

3.5 Submitted Documents

- Bill of Material
- PCB Layout
- Photo Document
- Technical Description
- Circuit Diagram
- Instruction Manual
- Rating Label

4. Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

The equipment under test (EUT) was configured to measure its maximum power level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All testing were performed according to the procedures in ANSI C63.4: 2003.

4.3 Special Accessories and Auxiliary Equipment

Kind of Equipment	Manufacturer	Type	S/N
Wireless SingStar Microphone	Namtai	SLEH-00089 (MIC)	-
PlayStation3	SONY	PlayStation3	0309656
Television	Sony	J29MF1	1519805

4.4 Countermeasures to achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Constructional Data Form or the Technical Construction File. No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test

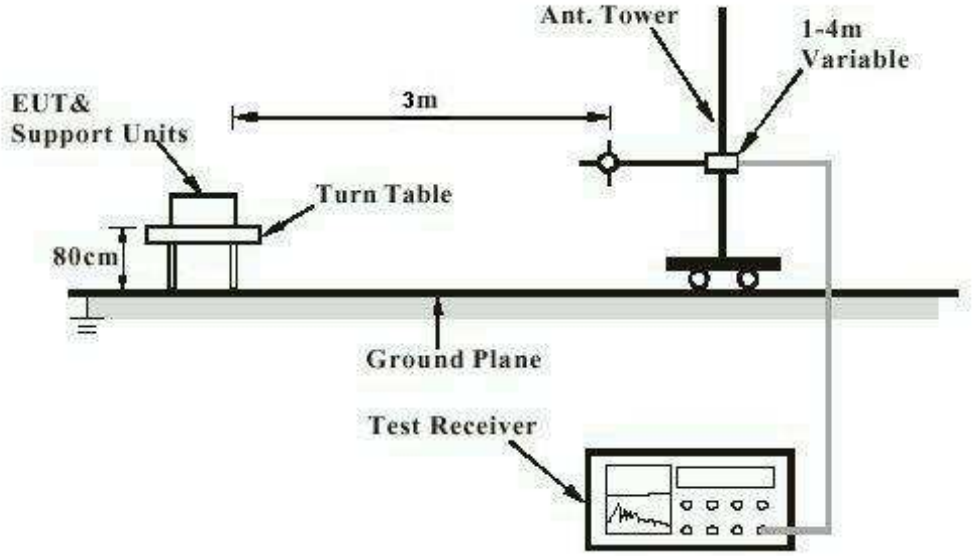


Diagram of Measurement Equipment Configuration for Conduction Measurement

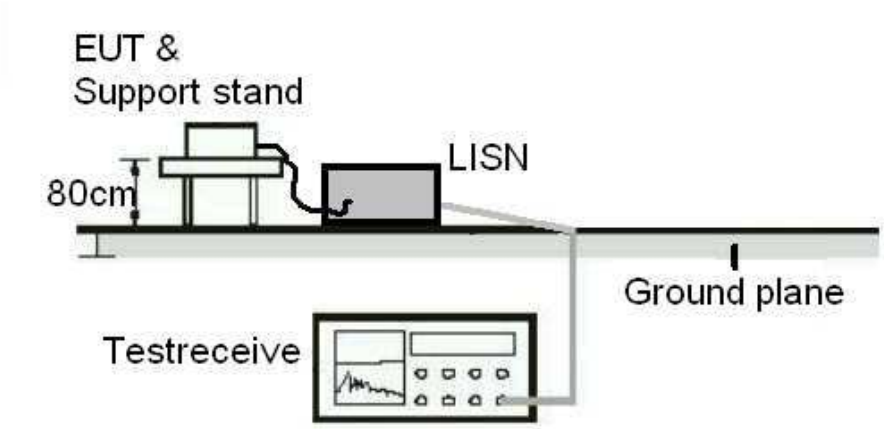
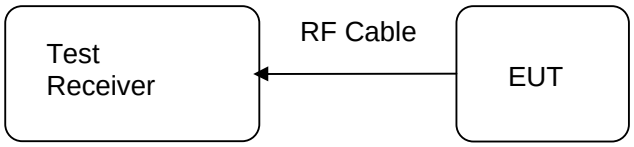


Diagram of Measurement Equipment Configuration for Transmitter Measurement



5. Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT: **Passed**

Test date	:	2008-09-04
Test standard	:	FCC Part 15.247(b)(4) and Part 15.203 RSS Gen 7.1.4
Limit	:	the use of antennas with directional gains that do not exceed 6 dBi

According to the manufacturer declared, the EUT has an internal antenna, the directional gain of antenna is -2.7dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to comply the provision.

Refer to EUT photo for details.

5.1.2 Peak Output Power

RESULT: **Passed**

Test date	:	2008-11-21
Test standard	:	FCC Part 15.247(b)(1) RSS-210 A8.4 (2)
Basic standard	:	ANSI C63.4: 2003
Limit	:	0.125 Watt
Kind of test site	:	Shielded room

Test setup

Test Channel	:	Low/ Middle/ High
Operation Mode	:	A
Ambient temperature	:	20℃
Relative humidity	:	48%
Atmospheric pressure	:	101 kPa

Table 4: Test result of Peak Output Power，blue unit

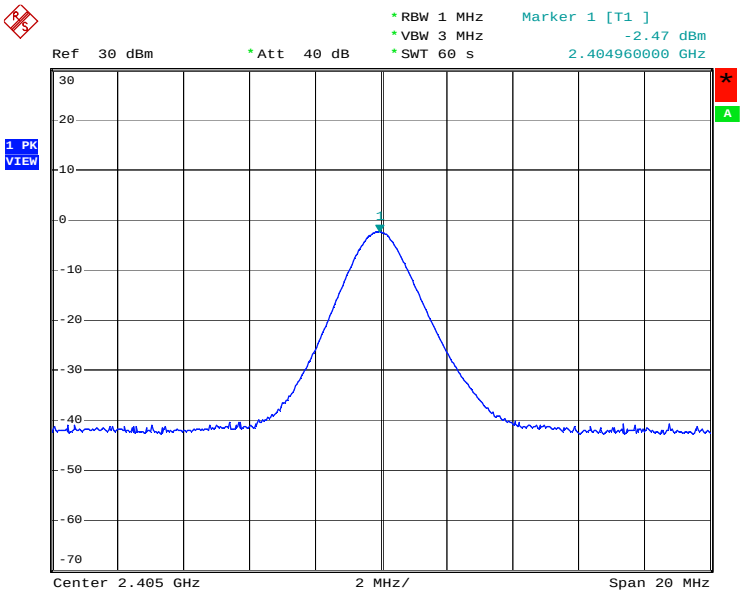
Channel	Channel Frequency (MHz)	Peak Output Power		Limit
		(dBm)	(W)	(W)
Low Channel	2405	-2. 47	0.0006	0.125
Middle Channel	2441	-1.21	0.0008	0.125
High Channel	2475	-0.09	0.001	0.125

Table 5: Test result of Peak Output Power, red unit

Channel	Channel Frequency (MHz)	Peak Output Power		Limit
		(dBm)	(W)	(W)
Low Channel	2407	-2.32	0.0006	0.125
Middle Channel	2443	-1.28	0.0007	0.125
High Channel	2477	-0.04	0.001	0.125

Test Plot of Peak Output Power

Low Channel



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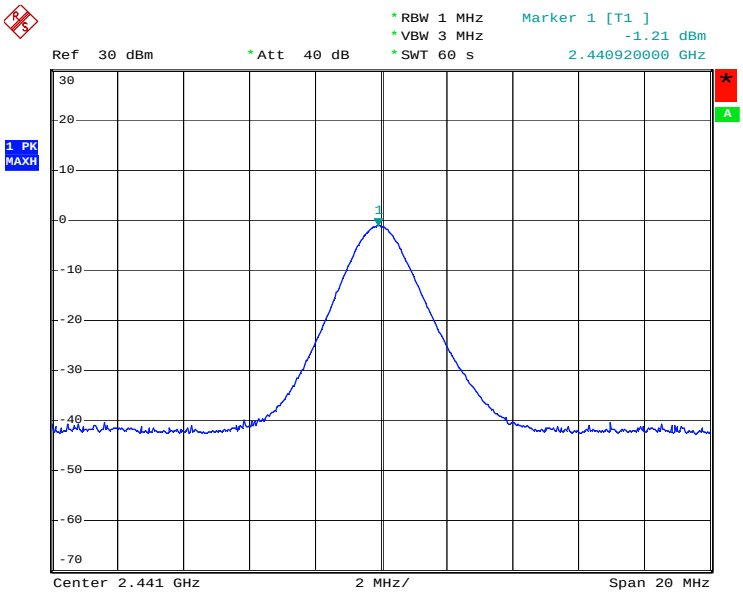
Middle Channel



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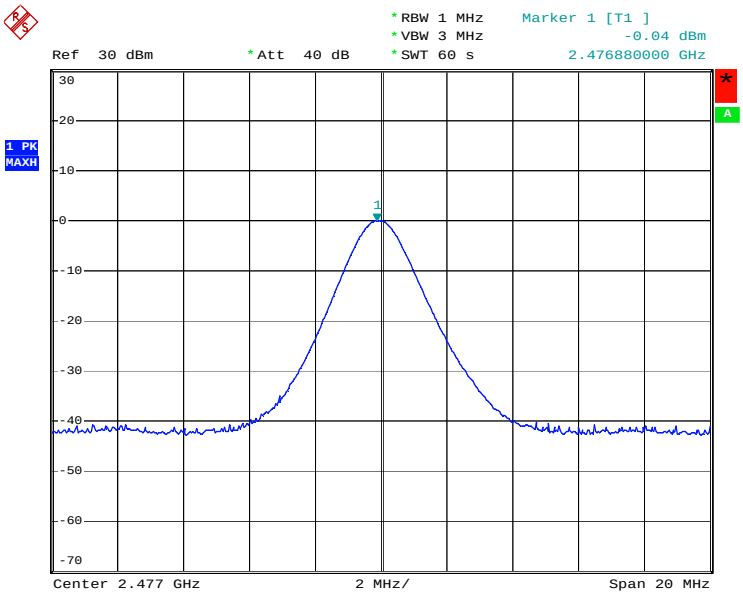
High Channel



Date: 21.NOV.2008 13:12:41

5.1.3 20dB Bandwidth

RESULT: **Passed**

Date of testing	:	2008-11-21
Test standard	:	FCC Part 15.247(a)(1) RSS-210 A8.1 (a)
Basic standard	:	ANSI C63.4: 2003
Kind of test site	:	Shielded room

Test setup

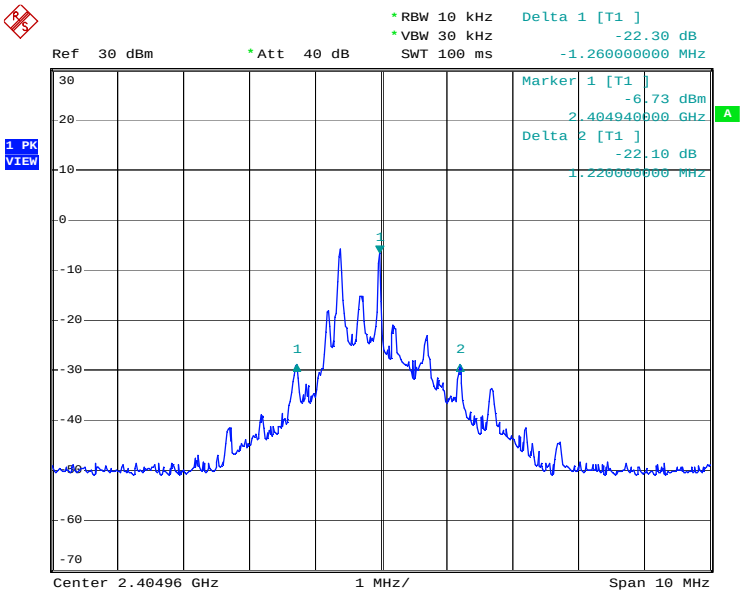
Test Channel	:	Low/ Middle/ High
Operation Mode	:	A
Ambient temperature	:	20℃
Relative humidity	:	48%
Atmospheric pressure	:	101 kPa

Table 6: Test result of 20dB Bandwidth

Channel	Channel Frequency (MHz)	20dB Bandwidth (MHz)
Low Channel	2405	2.48
Mid Channel	2441	2.46
High Channel	2477	2.52

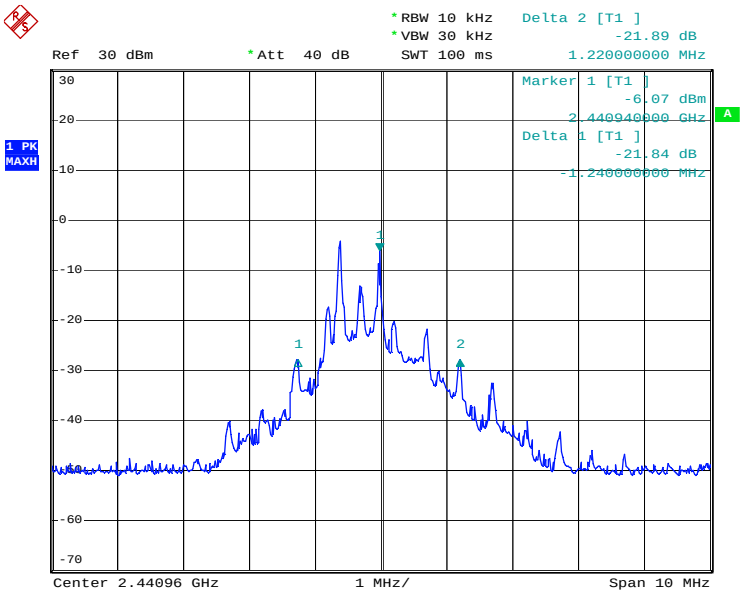
Test Plot of 20dB Bandwidth

Low Channel



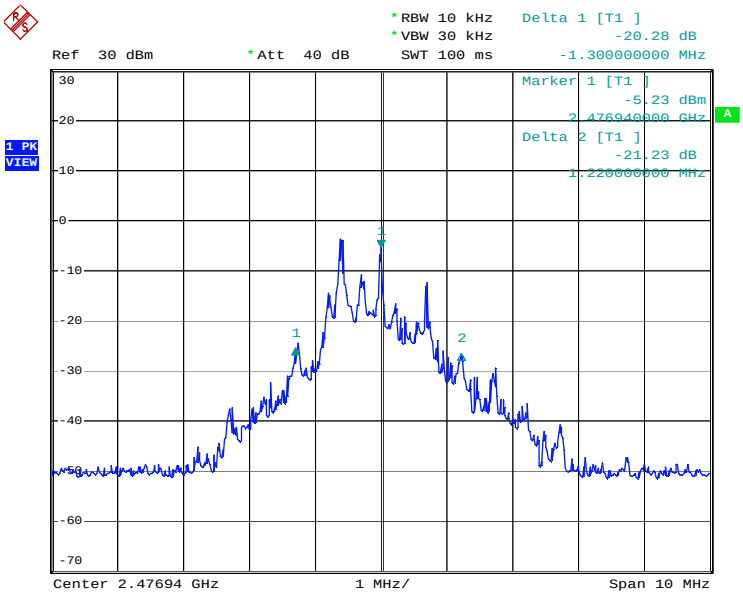
Date: 21.NOV.2008 12:40:20

Middle Channel



Date: 21.NOV.2008 13:04:02

High Channel



Date: 21.NOV.2008 13:14:33

5.1.4 100kHz Bandwidth of Frequency Band Edge

RESULT: **Passed**

Date of testing	:	2008-09-25
Test standard	:	FCC part 15.247(d) RSS-210 A8.5
Basic standard	:	ANSI C63.4: 2003
Limit	:	20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power); In addition, radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits specified in 15.209(a)
Kind of test site	:	Shield room

Test setup

Test Channel	:	Low/ High
Operation mode	:	A
Ambient temperature	:	22℃
Relative humidity	:	50%
Atmospheric pressure	:	100 kPa

All emissions are more than 20dB below fundamental, details refer to following test plot, and compliance is achived as well.

Test Plot of 100kHz Bandwidth of Frequency Band Edge, Blue unit

Low Channel, Horizontal

EMC32 Report

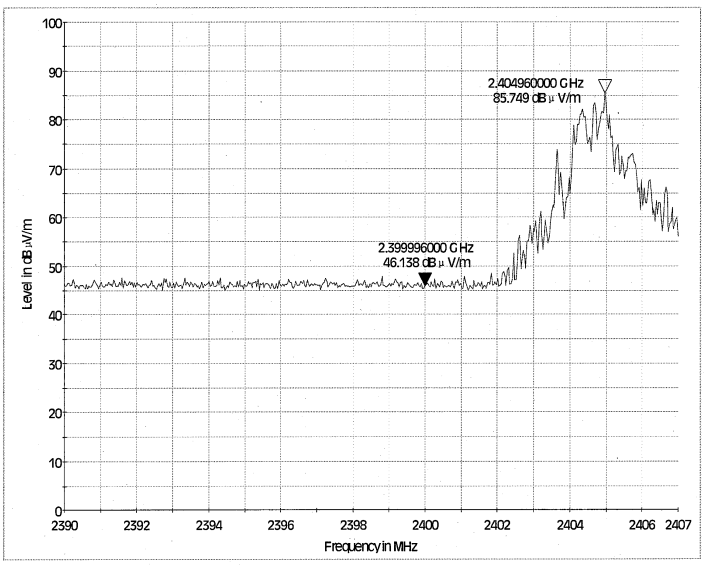
Test Information

Manufacturer Name:	Namtai Receiver
Model Number:	SLEH-00089(~~Reveiver~~)
Operating Conditions:	Blue channel_TX_Low channel
Comment:	Horizontal

Subrange 1

Frequency Range:	2.39GHz – 2.407GHz
Receiver:	TUV FSP 30
Transducer:	TUV SAC HF906 / TUV FSP 30-TUV SAC HF906

RBW = 100 kHz
VBW = 300 kHz
SWT = 100 ms



2008-09-03 2:30:42 PM

Low Channel, Vertical

EMC32 Report

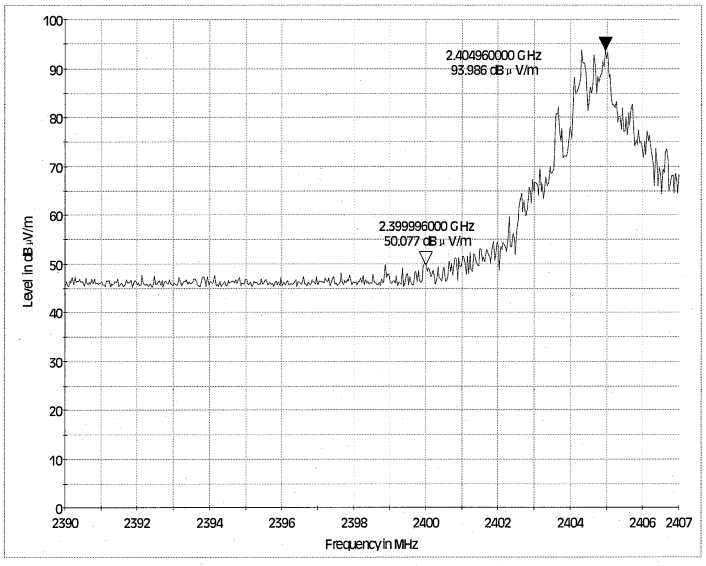
Test Information

Manufacturer Name:	Namtai Reciver
Model Number:	SLEH-00089(~~Reveiver~~)
Operating Conditions:	Blue channel_TX_Low channel
Comment:	Vertical

Subrange 1

Frequency Range:	2.39GHz – 2.407GHz
Receiver:	TUV FSP 30
Transducer:	TUV SAC HF906 / TUV FSP 30-TUV SAC HF906

RBW = 100 kHz
VBW = 300 kHz
SWT = 100 ms



2008-09-03 2:27:12 PM

High Channel, Horizontal

EMC32 Report

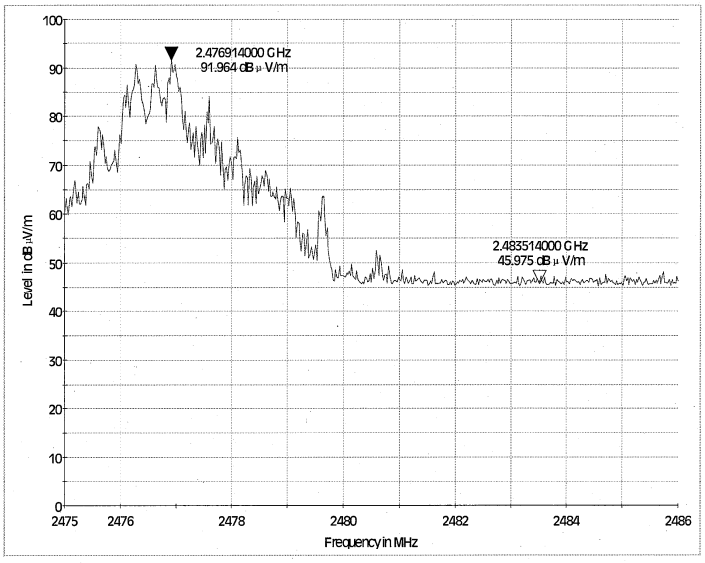
Test Information

Manufacturer Name:	Namtai Receiver
Model Number:	SLEH-00089(~~Reveiver~~)
Operating Conditions:	Blue channel_TX_High channel
Comment:	Horizontal

Subrange 1

Frequency Range:	2.475GHz – 2.486GHz
Receiver:	TUV FSP 30
Transducer:	TUV SAC HF906 / TUV FSP 30-TUV SAC HF906

RBW = 100 kHz
VBW = 300 kHz
SWT = 100 ms



2008-09-03 2:14:25 PM

High Channel, Vertical

EMC32 Report

Test Information

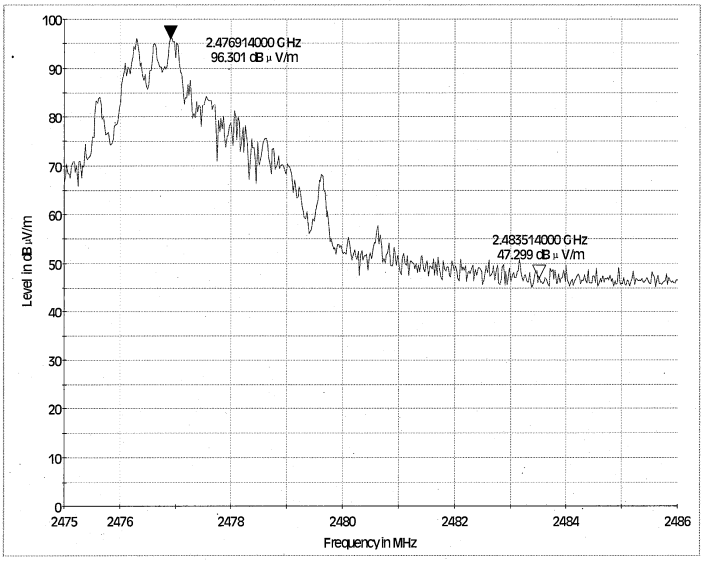
Manufacturer Name:	Namtai Receiver
Model Number:	SLEH-00089(~~Receiver~~)
Operating Conditions:	Blue channel_TX_High channel
Comment:	Vertical

DW 2008.9.04 Checked

Subrange 1

Frequency Range:	2.475GHz – 2.486GHz
Receiver:	TUV FSP 30
Transducer:	TUV SAC HF906 / TUV FSP 30-TUV SAC HF906

RBW = 100 kHz
VBW = 300 kHz
SWT = 100 ms



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Test Plot of 100kHz Bandwidth of Frequency Band Edge, Red unit

Low Channel, Horizontal

EMC32 Report

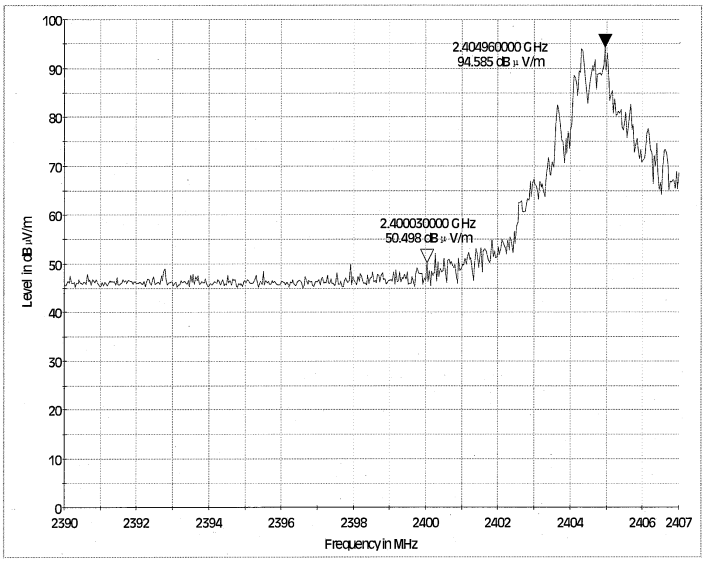
Test Information

Manufacturer Name:	Namtai Receiver
Model Number:	SLEH-00089(~~Reveiver~~)
Operating Conditions:	Red channel_TX_Low channel
Comment:	Horizontal

Subrange 1

Frequency Range:	2.39GHz – 2.407GHz
Receiver:	TUV FSP 30
Transducer:	TUV SAC HF906 / TUV FSP 30-TUV SAC HF906

RBW = 100 kHz
VBW = 300 kHz
SWT = 100 ms



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Low Channel, Vertical

EMC32 Report

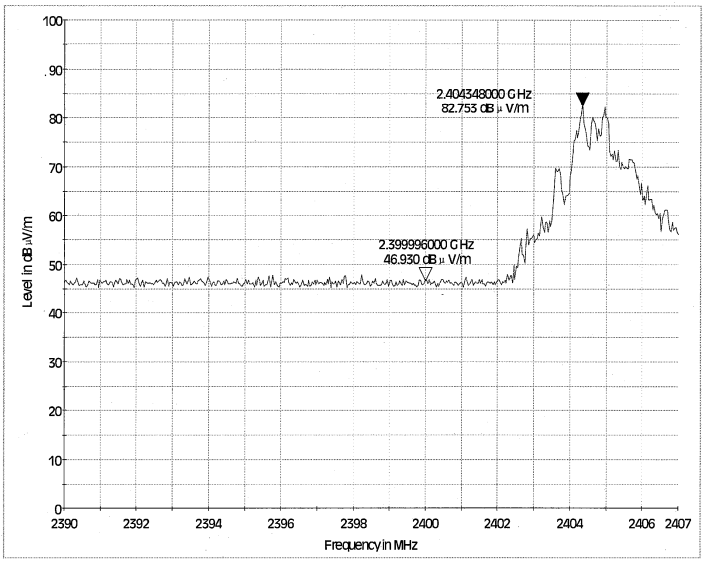
Test Information

Manufacturer Name:	Namtai Receiver
Model Number:	SLEH-00089(~~Reveiver~~)
Operating Conditions:	Red channel_TX_Low channel
Comment:	Vertical

Subrange 1

Frequency Range:	2.39GHz – 2.407GHz
Receiver:	TUV FSP 30
Transducer:	TUV SAC HF906 / TUV FSP 30-TUV SAC HF906

RBW = 100 kHz
VBW = 300 kHz
SWT = 100 ms



2008-09-03 2:24:23 PM

High Channel, Horizontal

EMC32 Report

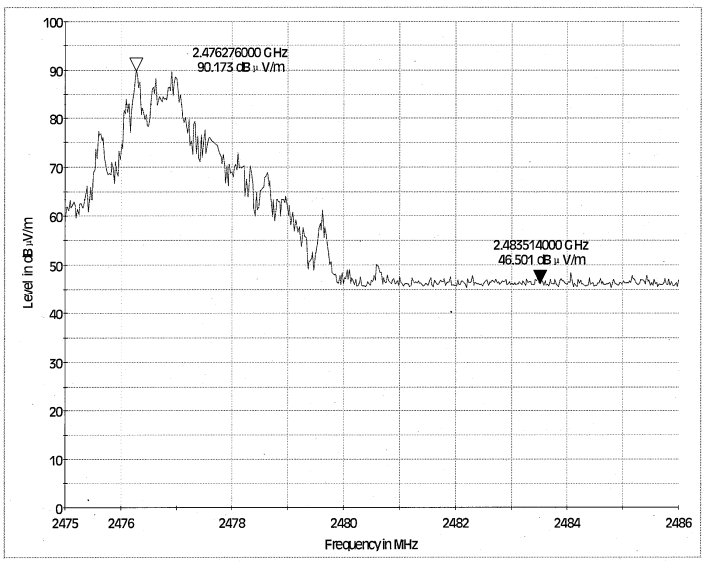
Test Information

Manufacturer Name:	Namtai Receiver
Model Number:	SLEH-00089(~~Reveiver~~)
Operating Conditions:	Red channel_TX_High channel
Comment:	Horizontal

Subrange 1

Frequency Range:	2.475GHz – 2.486GHz
Receiver:	TUV FSP 30
Transducer:	TUV SAC HF906 / TUV FSP 30-TUV SAC HF906

RBW = 100 kHz
VBW = 300 kHz
SWT = 100 ms



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High Channel, Vertical

EMC32 Report

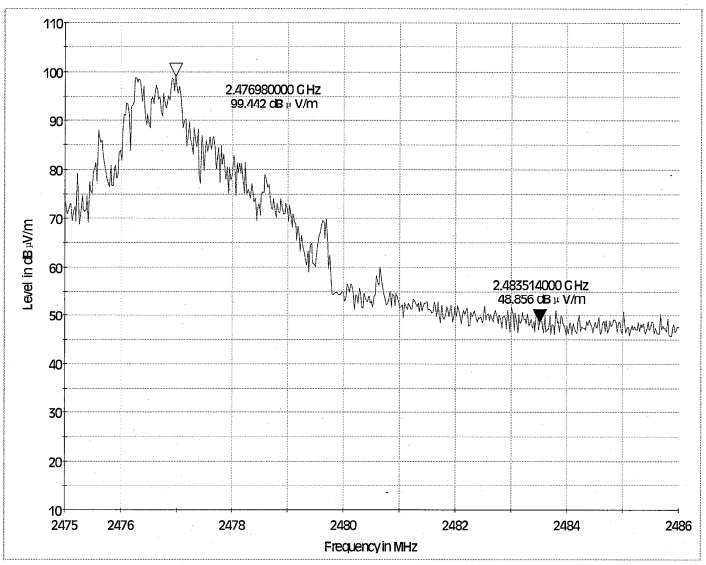
Test Information

Manufacturer Name:	Namtai Receiver
Model Number:	SLEH-00089(~~Reveiver~~)
Operating Conditions:	Red channel_TX_High channel
Comment:	Vertical

Subrange 1

Frequency Range:	2.475GHz – 2.486GHz
Receiver:	TUV FSP 30
Transducer:	TUV SAC HF906 / TUV FSP 30-TUV SAC HF906

RBW = 100 kHz
VBW = 300 kHz
SWT = 100 ms



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5.1.5 Spurious Emission

RESULT: **Passed**

Date of testing	:	2008-09-04 to 2008-09-25
Test standard	:	FCC part 15.247(d) RSS-210 Clause 2.2
Basic standard	:	ANSI C63.4: 2003
Limits	:	Refer to 15.209(a) of FCC part 15.247(d) Refer to RSS-210 Table 2
Kind of test site	:	3m Semi-Anechoic Chamber

Test setup

Test Channel	:	Low/ Middle/ High
Operation mode	:	A, B
Ambient temperature	:	22℃
Relative humidity	:	50%
Atmospheric pressure	:	100 kPa

Remark: Testing was carried out within frequency range 30MHz to the tenth harmonics. For details refer to following test curves.

Test Plot of Spurious emission of blue unit

Mode A.1 – Horizontal (30MHz – 1GHz)

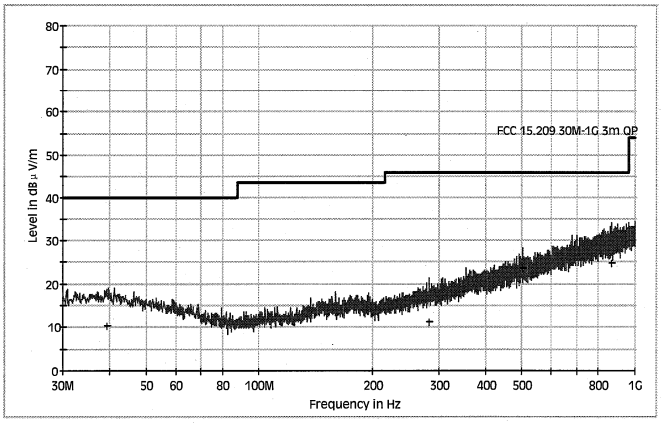
EMC32 Report

Test Information

Manufacturer Name:	Namtai Receiver
Model Number:	SLEH-00089(~~Revolver~~)
Operating Conditions:	Blue channel_TX_Low channel
Comment:	Horizontal

Subrange 1

Frequency Range:	30MHz - 1GHz
Receiver:	TUV ESCI 3
Transducer:	TUV SAC UVLB 9168 / TUV ESCI3 -TUV SAC UVLB 9168



Limit and Margin

Frequency (MHz)	QuasiPeak (dBµV/m)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Polarity
39.350000	10.5	14.4	29.5	40.0	H
282.950000	11.3	15.5	34.7	46.0	H
501.100000	23.8	21.7	22.2	46.0	H
868.100000	24.8	27.8	21.2	46.0	H

2008 9.04 Checked

2008-09-04 3:25:01 PM

Mode A.1 – Vertical (30MHz – 1GHz)

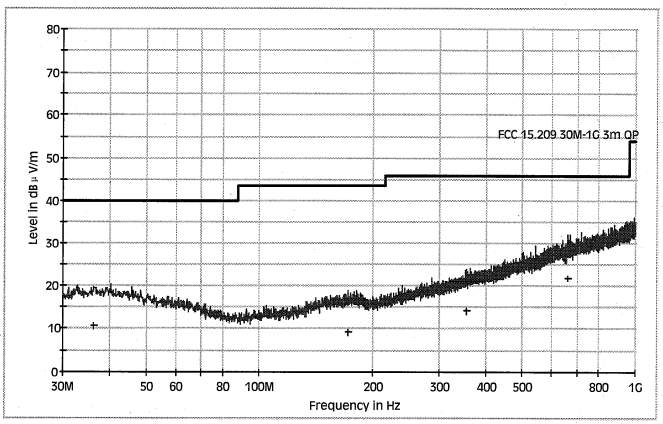
EMC32 Report

Test Information

Manufacturer Name:	Namtai Receiver
Model Number:	SLEH-00089(~~Receiver~~)
Operating Conditions:	Blue channel_TX_Low channel
Comment:	Vertical

Subrange 1

Frequency Range:	30MHz - 1GHz
Receiver:	TUV ESCI 3
Transducer:	TUV SAC UVLB 9168 / TUV ESCI3 -TUV SAC UVLB 9168



Limit and Margin

Frequency (MHz)	QuasiPeak (dBµV/m)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Polarity
36.300000	10.7	14.3	29.3	40.0	V
171.400000	9.2	13.3	34.3	43.5	V
355.700000	14.3	18.3	31.7	46.0	V
658.200000	21.8	24.8	24.2	46.0	V

TÜV 2008-09-04 Checked

2008-09-04 3:29:45 PM

Mode A.1 – Horizontal (1GHz – 18GHz)

EMC32 Report

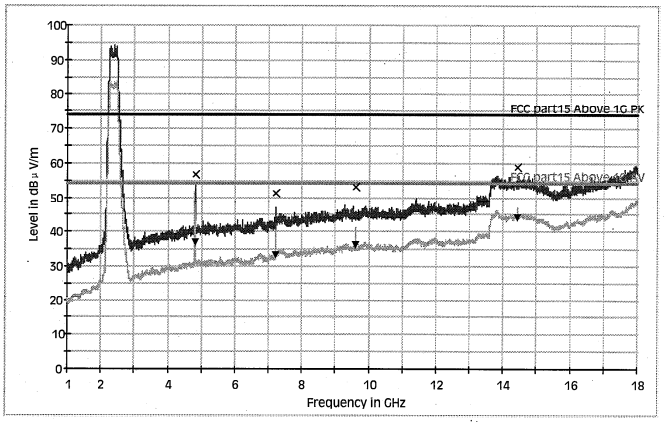
Test Information

Manufacturer Name:	Namtai Receiver
Model Number:	SLEH-00089(~~Receiver~~)
Operating Conditions:	Blue channel_TX_Low channel
Comment:	Horizontal

2008 9.04 Checked

Subrange 1

Frequency Range:	1GHz - 18GHz
Receiver:	TUV FSP 30
Transducer:	TUV SAC HF906 / TUV FSP 30-TUV SAC HF906



Limit and Margin PK

Frequency (MHz)	MaxPeak (dB µ V/m)	Margin (dB)	Limit (dB µ V/m)	Polarity	Corr. (dB)
4808.500000	56.7	17.3	74.0	H	-5.1
7213.500000	51.3	22.7	74.0	H	-1.3
9617.000000	52.9	21.1	74.0	H	3.5
14425.500000	58.7	15.3	74.0	H	7.8

Limit and Margin AV

Frequency (MHz)	Average (dB µ V/m)	Margin (dB)	Limit (dB µ V/m)	Polarity	Corr. (dB)
4808.500000	36.8	17.2	54.0	H	-5.1
7213.500000	33.1	20.9	54.0	H	-1.3
9617.000000	36.1	17.9	54.0	H	3.5
14425.500000	44.2	9.8	54.0	H	7.8

2008-09-03

2008 9.04 Checked

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Mode A.1 – Vertical (1GHz – 18GHz)

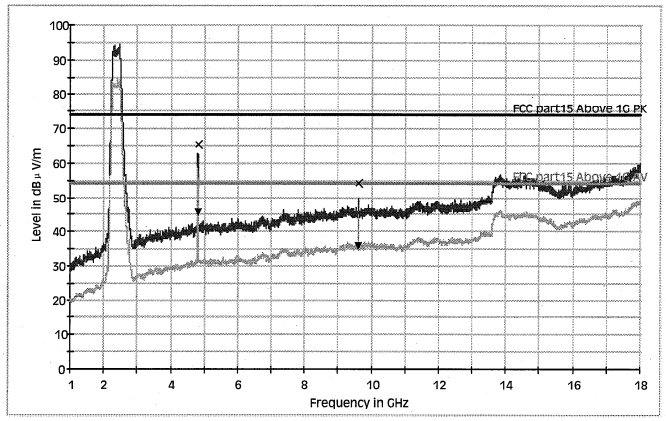
EMC32 Report

Test Information

Manufacturer Name:	Namtai Receiver
Model Number:	SLEH-00089(~~Receiver~~)
Operating Conditions:	Blue channel_TX_Low channel
Comment:	Vertical

Subrange 1

Frequency Range:	1GHz - 18GHz
Receiver:	TUV FSP 30
Transducer:	TUV SAC HF906 / TUV FSP 30-TUV SAC HF906



Limit and Margin PK

Frequency (MHz)	MaxPeak (dBµV/m)	Margin (dB)	Limit (dBµV/m)	Polarity	Corr. (dB)
4808.500000	65.3	8.7	74.0	V	-5.1
9619.500000	54.1	19.9	74.0	V	3.5

Limit and Margin AV

Frequency (MHz)	Average (dBµV/m)	Margin (dB)	Limit (dBµV/m)	Polarity	Corr. (dB)
4808.500000	45.4	8.6	54.0	V	-5.1
9619.500000	35.8	18.2	54.0	V	3.5

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Mode A.1 – Horizontal (18GHz – 26GHz)

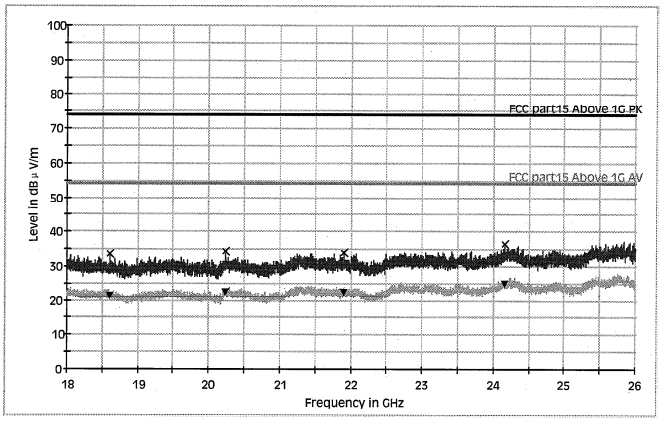
EMC32 Report

Test Information

Manufacturer Name:	Namtai Receiver
Model Number:	SLEH-00089(~~Revoiver~~)
Operating Conditions:	Blue channel_TX_Low channel
Comment:	Horizontal

Subrange 1

Frequency Range:	18GHz - 26GHz
Receiver:	TUV FSP 30
Transducer:	TUV SAC 3160-09 / TUV FSP 30-TUV SAC 3160-09



Limit and Margin PK

Frequency (MHz)	MaxPeak (dBµV/m)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Polarity
18601.000000	33.6	-14.5	40.4	74.0	H
20235.000000	34.3	-13.9	39.7	74.0	H
21902.000000	34.1	-13.1	39.9	74.0	H
24168.000000	36.5	-12.2	37.5	74.0	H

Limit and Margin AV

Frequency (MHz)	Average (dBµV/m)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Polarity
18601.000000	21.4	-14.5	32.6	54.0	H
20235.000000	22.3	-13.9	31.7	54.0	H
21902.000000	22.4	-13.1	31.6	54.0	H
24168.000000	24.9	-12.2	29.1	54.0	H

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Mode A.1 – Vertical (18GHz – 26GHz)

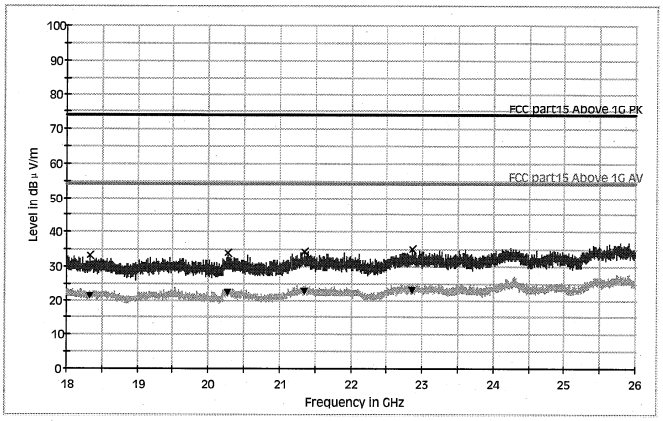
EMC32 Report

Test Information

Manufacturer Name:	Namtai Receiver
Model Number:	SLEH-00089(~~Reveiver~~)
Operating Conditions:	Blue channel_TX_Low channel
Comment:	Vertical

Subrange 1

Frequency Range:	18GHz - 26GHz
Receiver:	TUV FSP 30
Transducer:	TUV SAC 3160-09 / TUV FSP 30-TUV SAC 3160-09



Limit and Margin PK

Frequency (MHz)	MaxPeak (dBµV/m)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Polarity
18329.000000	33.3	-14.4	40.7	74.0	V
20276.000000	34.0	-13.9	40.0	74.0	V
21353.000000	34.4	-13.4	39.6	74.0	V
22858.000000	34.9	-12.9	39.1	74.0	V

Limit and Margin AV

Frequency (MHz)	Average (dBµV/m)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Polarity
18329.000000	21.5	-14.4	32.5	54.0	V
20276.000000	22.3	-13.9	31.7	54.0	V
21353.000000	22.9	-13.4	31.1	54.0	V
22858.000000	23.2	-12.9	30.8	54.0	V

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Mode A.2 – Horizontal (30MHz – 1GHz)

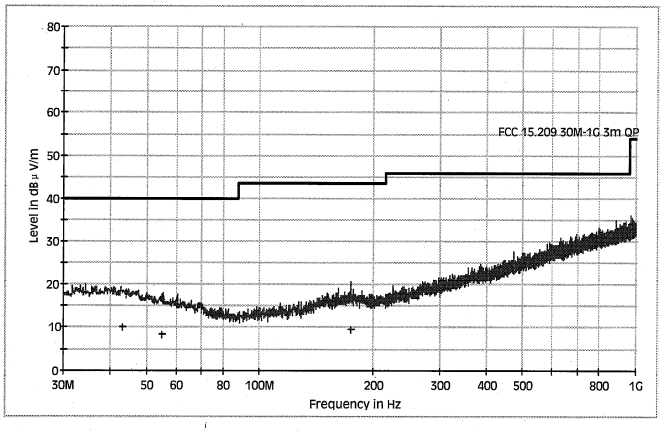
EMC32 Report

Test Information

Manufacturer Name:	Namtai
Model Number:	SLEH-00089(~~Receiver~~ Receiver)
Operating Conditions:	Blue channel_TX_Middle channel
Comment:	Horizontal

Subrange 1

Frequency Range:	30MHz - 1GHz
Receiver:	TUV ESCI 3
Transducer:	TUV SAC UVLB 9168 / TUV ESCI3 -TUV SAC UVLB 9168



Limit and Margin

Frequency (MHz)	QuasiPeak (dBµV/m)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Polarity
43.200000	10.1	13.9	29.9	40.0	H
54.850000	8.3	12.1	31.7	40.0	H
174.750000	9.4	13.5	34.1	43.5	H

2008-09-04 3:33:04 PM

Mode A.2 – Vertical (30MHz – 1GHz)

EMC32 Report

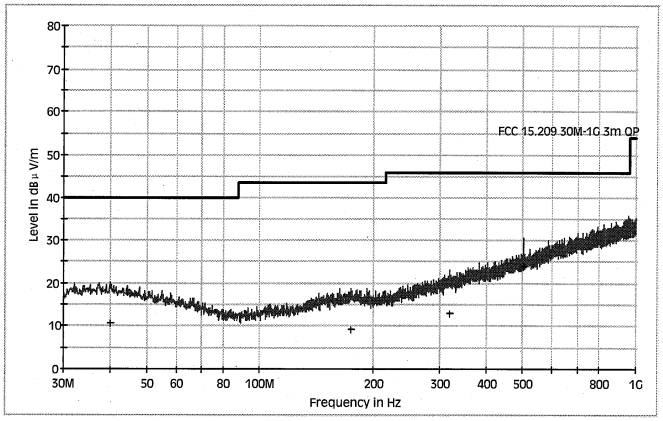
Test Information

Manufacturer Name:	Namtai Receiver
Model Number:	SLEH-00089(~~Receiver~~)
Operating Conditions:	Blue channel_TX_Middle channel
Comment:	Vertical

2008.9.04 Checked

Subrange 1

Frequency Range:	30MHz - 1GHz
Receiver:	TUV ESCI 3
Transducer:	TUV SAC UVLB 9168 / TUV ESCI3 -TUV SAC UVLB 9168



Limit and Margin

Frequency (MHz)	QuasiPeak (dBµV/m)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Polarity
39.950000	10.8	14.5	29.2	40.0	V
174.750000	9.3	13.5	34.2	43.5	V
319.050000	13.1	17.1	32.9	46.0	V
501.100000	23.9	21.7	22.1	46.0	V

2008-09-04 3:36:33 PM

Mode A.2 –Horizontal (1GHz – 18GHz)

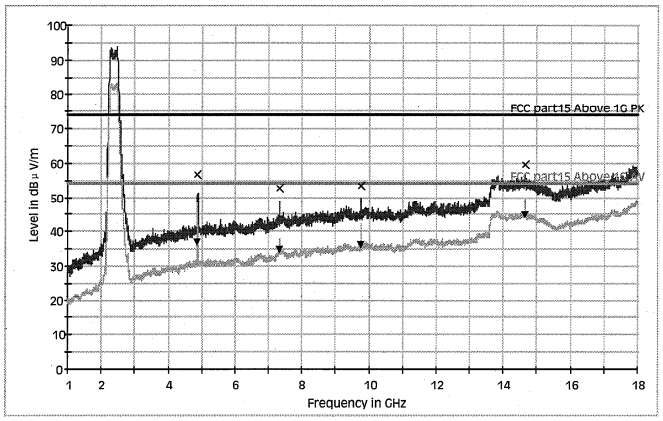
EMC32 Report

Test Information

Manufacturer Name:	Namtai Receiver
Model Number:	SLEH-00089(~~Revelver~~)
Operating Conditions:	Blue channel_TX_Middle channel
Comment:	Horizontal

Subrange 1

Frequency Range:	1GHz - 18GHz
Receiver:	TUV FSP 30
Transducer:	TUV SAC HF906 / TUV FSP 30-TUV SAC HF906



Limit and Margin PK

Frequency (MHz)	MaxPeak (dB µ V/m)	Margin (dB)	Limit (dB µ V/m)	Polarity	Corr. (dB)
4880.500000	56.5	17.5	74.0	H	-5.2
7321.500000	52.8	21.2	74.0	H	-0.7
9763.500000	53.5	20.5	74.0	H	3.7
14642.000000	59.5	14.5	74.0	H	7.6

Limit and Margin AV

Frequency (MHz)	Average (dB µ V/m)	Margin (dB)	Limit (dB µ V/m)	Polarity	Corr. (dB)
4880.500000	36.8	17.2	54.0	H	-5.2
7321.500000	34.8	19.2	54.0	H	-0.7
9763.500000	36.2	17.8	54.0	H	3.7
14642.000000	44.8	9.2	54.0	H	7.6

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Mode A.2 –Vertical (1GHz – 18GHz)

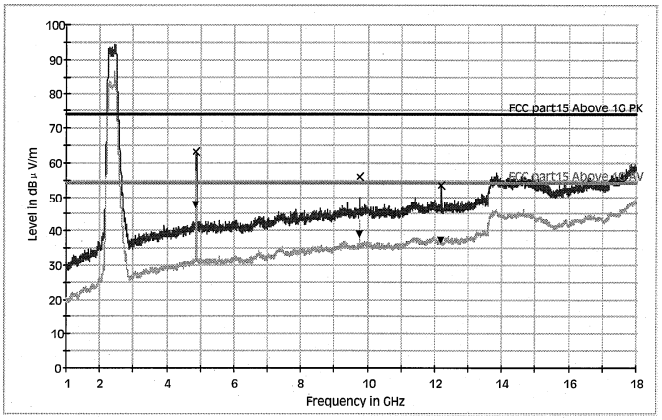
EMC32 Report

Test Information

Manufacturer Name:	Namtai
Model Number:	SLEH-00089(~~Revelver~~ Receiver)
Operating Conditions:	Blue channel_TX_Middle channel
Comment:	Vertical

Subrange 1

Frequency Range:	1GHz - 18GHz
Receiver:	TUV FSP 30
Transducer:	TUV SAC HF906 / TUV FSP 30-TUV SAC HF906



Limit and Margin PK

Frequency (MHz)	MaxPeak (dB µ V/m)	Margin (dB)	Limit (dB µ V/m)	Polarity	Corr. (dB)
4880.500000	63.3	10.7	74.0	V	-5.2
9761.500000	55.9	18.1	74.0	V	3.7
12203.000000	53.6	20.4	74.0	V	3.6

Limit and Margin AV

Frequency (MHz)	Average (dB µ V/m)	Margin (dB)	Limit (dB µ V/m)	Polarity	Corr. (dB)
4880.500000	47.5	6.5	54.0	V	-5.2
9761.500000	39.1	14.9	54.0	V	3.7
12203.000000	37.2	16.8	54.0	V	3.6

2008-09-03 9:09:21 PM

Mode A.2 – Horizontal (18GHz – 26GHz)

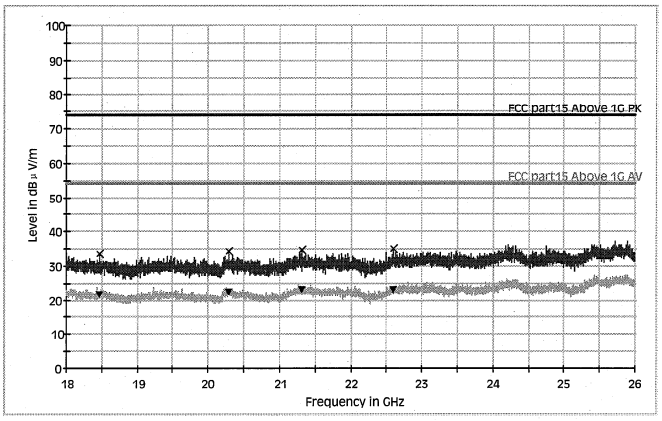
EMC32 Report

Test Information

Manufacturer Name:	Namtai Receiver
Model Number:	SLEH-00089(~~Reveiver~~)
Operating Conditions:	Blue channel_TX_Middle channel
Comment:	Horizontal

Subrange 1

Frequency Range:	18GHz - 26GHz
Receiver:	TUV FSP 30
Transducer:	TUV SAC 3160-09 / TUV FSP 30-TUV SAC 3160-09



Limit and Margin PK

Frequency (MHz)	MaxPeak (dBµV/m)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Polarity
18474.000000	33.5	-14.3	40.5	74.0	H
20296.000000	34.1	-13.9	39.9	74.0	H
21311.000000	34.6	-13.1	39.4	74.0	H
22596.000000	34.9	-12.3	39.1	74.0	H

Limit and Margin AV

Frequency (MHz)	Average (dBµV/m)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Polarity
18474.000000	21.6	-14.3	32.4	54.0	H
20296.000000	22.3	-13.9	31.7	54.0	H
21311.000000	23.0	-13.1	31.0	54.0	H
22596.000000	23.0	-12.3	31.0	54.0	H

2008-09-04 11:35:50 AM

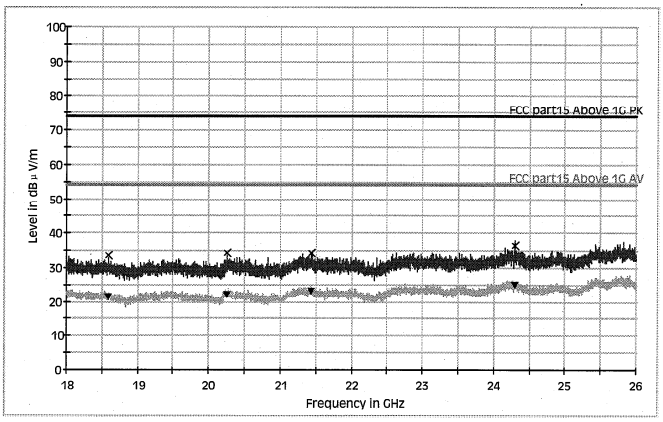
Mode A.2 – Vertical (18GHz – 26GHz)

EMC32 Report

Test Information

Manufacturer Name: Namtai Receiver
Model Number: SLEH-00089(~~Receiver~~)
Operating Conditions: Blue channel_TX_Middle channel
Comment: Vertical

Subrange 1
Frequency Range: 18GHz - 26GHz
Receiver: TUV FSP 30
Transducer: TUV SAC 3160-09 / TUV FSP 30-TUV SAC 3160-09



Limit and Margin PK

Frequency (MHz)	MaxPeak (dBµV/m)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Polarity
18595.000000	33.6	-14.5	40.4	74.0	V
20255.000000	34.4	-13.9	39.6	74.0	V
21434.000000	34.4	-13.1	39.6	74.0	V
24291.000000	36.4	-12.2	37.6	74.0	V

Limit and Margin AV

Frequency (MHz)	Average (dBµV/m)	Corr. (dB)	Margin (dB)	Limit (dBµV/m)	Polarity
18595.000000	21.3	-14.5	32.7	54.0	V
20255.000000	22.2	-13.9	31.8	54.0	V
21434.000000	23.1	-13.1	30.9	54.0	V
24291.000000	25.0	-12.2	29.0	54.0	V

2008-09-04 11:33:32 AM