TEST REPORT

STANDARD : FCC Part15B Class B -Peripherals-

Applicant	Testing Laboratory
Kenwood Corporation 1-16-2, Hakusan, Midori-ku, Yokohama-shi, Kanagawa, 226-8525 Japan Tel. +81 45 939 6254	Intertek Japan K.K. Tochigi Laboratory URL: http://www.japan.intertek-etlsemko.com 870, Nakaawano, Kanuma-shi, Tochigi-ken 322-0306 Japan Tel. +81 289 86 7121

Equipment Type	HF/50MHz ALL MODE TRANSCEIVER
Trademark	KENWOOD
Model(s)	TS-590S
Serial No.	None
Equipment Authorization	Certification (FCC ID : K44407100)
Test Result	Complied
Report Number	JT10070002
Report Issue Date	July 16, 2010

Approved by

Kazuo Gokita
[Manager]

Tested by

Atsuyuki Morishima

VLAC-008-5

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SECTION 1. GENERAL INFORMATION

TEST PERFORMED

Location	Tochigi No.2 Test Site
EUT Received	June 22, 2010
Date of Test	From July 2, 2010 to July 6, 2010
Standard Applied	FCC Part15B Class B -Peripherals-
Measurement methods	ANSI C63.4-2003
Test Procedure	Document number : RJP-EM001, RJP-EM003
Deviation from Standard(s)	None

QUALIFICATIONS OF TESTING LABORATORY

ACCREDITATION	**SCOPE**	**LAB. CODE**	**Remarks**
VLAC	EMC Testing	VLAC-008-5	JAPAN
BSMI	EMC Testing	SL2-IN-E-6017, SL2-AI-E-6017	TAIWAN
FILING			
VCCI	EMC Testing	R-257, C-260, C-284, T-1736, T-1737, G-124 R-258, C-261, C-285, T-1738, T-1739 R-259, C-262, T-1740, G-125	JAPAN
FCC	EMC Testing	Designation Number : JP0011	USA
IC	EMC Testing	2042P-1, 2042P-2	CANADA
SAUDI ARABIA	EMC Testing	N/A	

ABBREVIATIONS

EUT	Equipment Under Test	DoC	Declaration of Conformity
AMN	Artificial Mains Network	ISN	Impedance Stabilization Network
LISN	Line Impedance Stabilization Network	Q-P	Quasi-peak
AMP	Amplifier	AVG	Average
ATT	Attenuator	PK	Peak
ANT	Antenna	Cal	Calibration
BBA	Broadband Antenna	N/A	Not applicable or Not available
DIP	Dipole Antenna	LCD	Liquid-Crystal Display
AE	Associated Equipment	VFO	Variable Frequency Oscillator

SECTION 2. SUMMARY OF TEST RESULTS

The minimum margins to the limits are as follows:

Conducted disturbance at mains terminals	RX mode(0.03MHz:ANT 1) 13.5 dB (3.7933 MHz) AVG RX mode(60.000MHz:ANT 1) 13.5 dB (3.9980 MHz) AVG
Radiated disturbance	RX mode(30.000MHz:ANT 1) 2.6 dB (412.37 MHz)

Note : 1. See Section 10 for details.

< Measurement data correction >

* Conducted disturbance at mains terminals
Emission Level [dBµV] = Meter Reading [dBµV] + Factor [dB]
Margin [dB] = Limit [dBµV] - Emission Level [dBµV]
*Factor = LISN Factor + Cable Loss + ATT

* Radiated disturbance
Emission Level [dBµV/m] = Meter Reading [dBµV] + Factor [dB/m]
Margin [dB] = Limit [dBµV/m] - Emission Level [dBµV/m]
* Factor = Antenna Factor + Cable Loss - Amplifier Gain + ATT
(– Distance Conversion Factor)

SECTION 3. EQUIPMENT UNDER TEST

The equipment under test (EUT) consisted of the following apparatus.

3.1 System Configuration

Symbol	Item	Model No.	Serial No.	Manufacturer	Remarks	FCC ID
A	HF/50MHz ALL MODE TRANSCEIVER	TS-590S	None	KENWOOD	EUT	K44407100
Rated Power : DC13.8 V ± 15% 1.5 A max.						
Supplied Power : DC13.8 V						
Condition of Equipment	Prototype					
Type	Tabletop					
Suppression Devices	No Modifications by the laboratory were made to the device					

3.2 Overview of EUT

Frequency Ranges	0.030 – 60.000 MHz
Receiver Type	Double or Triple Conversion
Model of Operation	J3E, A1A, A3E, F3E, F1B

3.3 Intermediate Frequencies

1st	11.374MHz(upper) or 73.095MHz(upper)
2nd	24kHz(upper or lower) or 10.695MHz(lower)
3rd	24kHz(upper) or 455kHz(lower)

3.4 Highest Frequency Oscillator(s) / Crystal(s)

Base Clock	Operating Frequency	Board Name	Remarks
24 MHz	480 MHz	Local PCB	

3.5 Port(s)/Connector(s)

Port Name	Connector Type	Connector Pin	Remarks
ANT 1	M	2pin	
ANT 2	M	2pin	
EXT. AT	JST 6pin	6pin	
DC 13.8 V	JST 4pin	4pin	
COM	D-Sub	9pin	
USB	Type B	4pin	
EXT SP	3.5Φ	2pin	
ACC2	MINI-DIN	13pin	
REMOTE	MINI-DIN	7pin	
KEY	3.5Φ	2pin	
PADDLE	3.5Φ	3pin	
DRV	RCA	2pin	
RX ANT	RCA	2pin	
MIC	Receptacle	8pin	FRONT
PHONES	6.2Φ	3pin	FRONT

3.6 Frequency Range of Measurements

	Required Measurement Frequency Range	Measured Frequency Range
Conducted disturbance at mains terminals	0.15M – 30 MHz	0.15M – 30 MHz
Radiated disturbance	30M – 2000 MHz	30M – 2000 MHz

SECTION 4. SUPPORT EQUIPMENT

The EUT was supported by the following equipment during the test.

Symbol	Item	Model No.	Serial No.	Manufacturer	Remarks	FCC ID
B	DC Power Supply	PS-60	None	KENWOOD		N/A
C	Microphone	MC-47	None	KENWOOD		N/A
D	Headphone	HS-6	None	KENWOOD		N/A
E	Speaker	SP-50B	None	KENWOOD	2.5W 8ohm	N/A
F	TCXO	SO-3	None	KENWOOD		N/A
G	Voice Guide & Storage Unit	VGS-1	None	KENWOOD		N/A
H,I,J,K	Dummy Antenna	None	None	None		N/A
L	Computer	DMC	FXYKV1X	DELL		DoC
M	Mobile Bracket	MB-430	None	KENWOOD		N/A
N	LCD	E172FPb	None	DELL		DoC
O	Printer	C8154AL	TH71Q5Z024	HEWLETT PACKARD		DoC
P	AC Adaptor	0957-2171	E151B100MU02L	HEWLETT PACKARD		N/A
Q	Keyboard	SK-8115	None	DELL		DoC
R	Mouse	M-S34	141189-401	Compaq		DZL211029
Supplied Power:						
B, L , N, P	AC120 V, 60 Hz					

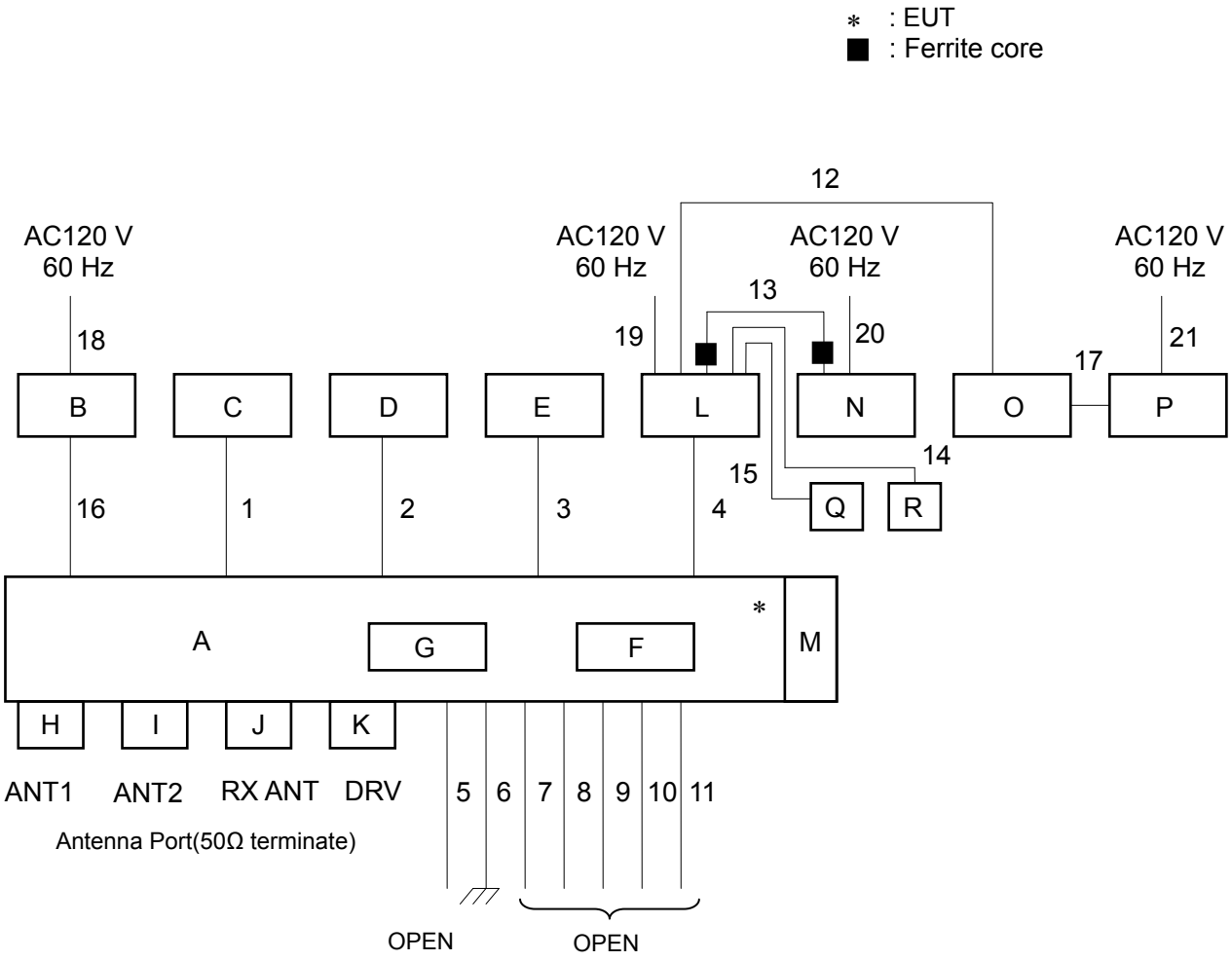
SECTION 5. USED CABLE(S)

The following cable(s) was used for the test.

No.	Name	Length (m)	Shield	Metal Connector	Ferrite Core
1	Microphone cable	0.60	No	Yes	
2	Headphone cable	1.50	No	No	
3	Speaker cable	2.50	No	No	
4	USB cable	1.00	Yes	Yes	
5	EXT AT cable	1.00	No	No	
6	GND cable	1.20	No	N/A	
7	COM cable	1.50	No	Yes	
8	ACC 2 cable	1.00	No	No	
9	Remote cable	1.00	No	No	
10	KEY cable	1.00	No	No	
11	Paddle cable	1.00	No	No	
12	Printer cable	2.40	Yes	Yes	
13	Monitor cable	1.80	Yes	Yes	Fixed x 2
14	Mouse cable	1.80	Yes	Yes	
15	Keyboard cable	2.00	Yes	Yes	
16	Power cable for TS-590S (DC)	2.00	No	No	
17	Power cable for Printer (DC)	1.70	No	No	
18	Power cable for DC Supply (AC)	1.75	No	No	
19	Power cable for Computer (AC)	1.90	No	No	
20	Power cable for LCD (AC)	1.70	No	No	
21	Power cable for AC Adaptor (AC)	0.90	No	No	

Note : No. 13 cable is supplied together with LCD(N).

SECTION 6. TEST CONFIGURATION



The symbols and numbers assigned to the equipments and cables on this diagram correspond to the ones in Sections 3 to 5.

SECTION 7. OPERATING CONDITION

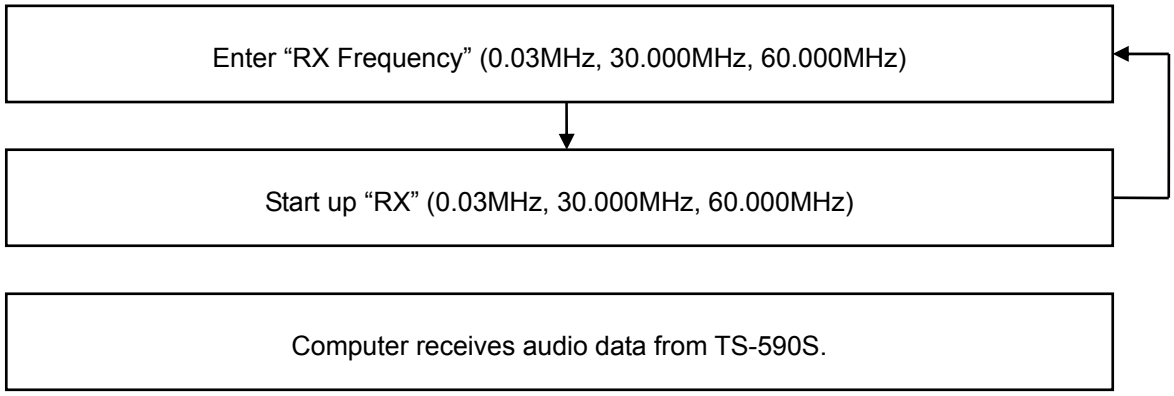
The EUT was operated under the following conditions during the test.

7.1 Operating Condition

The test was carried out under RX mode.
EUT was examined in the operating conditions that had maximum emissions.

7.2 Operating Flow [RX mode]

Following operations were performed continuously.

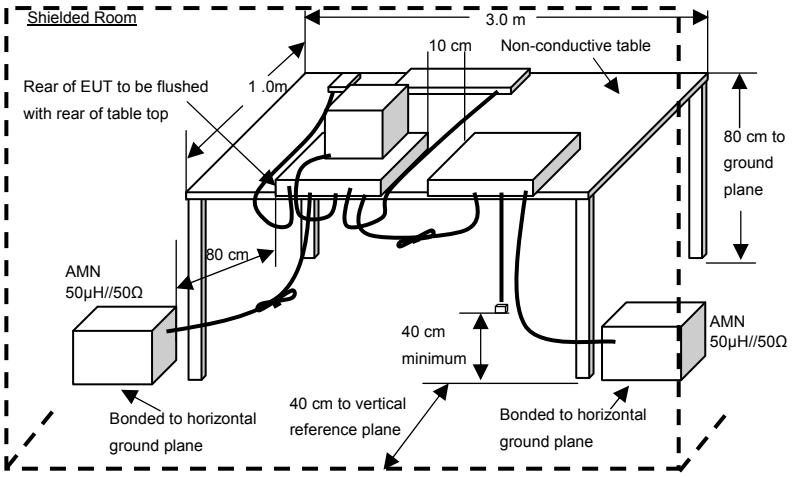


SECTION 8. TEST PROCEDURE(S)

Test was carried out under the following conditions.

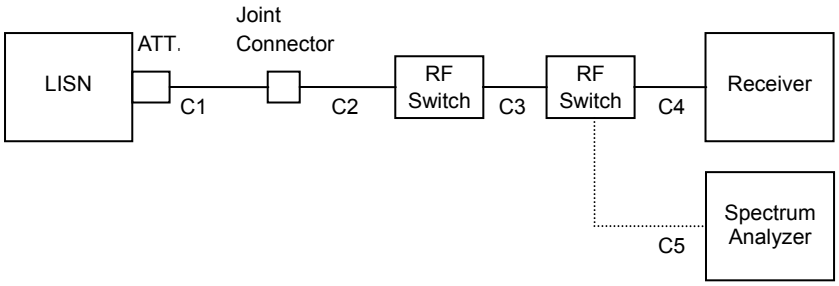
Conducted disturbance at mains terminals

Test setup as per standard



* Reference Ground plane : greater than 2 x 2m

Diagram of the measuring instruments



Setting for the instruments

Frequency [MHz]	Instrument	Detector Function	Resolution Bandwidth	Video Bandwidth
0.15 – 30	Receiver	Quasi Peak	10 kHz	N/A
		Average	10 kHz	N/A

[Preliminary Measurement]
EUT is tested on all operating conditions.
The spectrum analyzer is controlled by the computer program to sweep the frequency range to be measured, then spectrum chart is plotted out to find the worst emission conditions in operating mode and/or configuration decision for the final test.
All leads other than safety ground are tested.

[Final Measurement]
The EUT is operated in the worst emission condition found by the preliminary test.
The equipment and cables are arranged or manipulated within the range of the test standard in the above condition.
At least six highest spectrum are measured in quasi-peak and average (if necessary) using the test receiver.

Radiated disturbance

Test setup as per standard

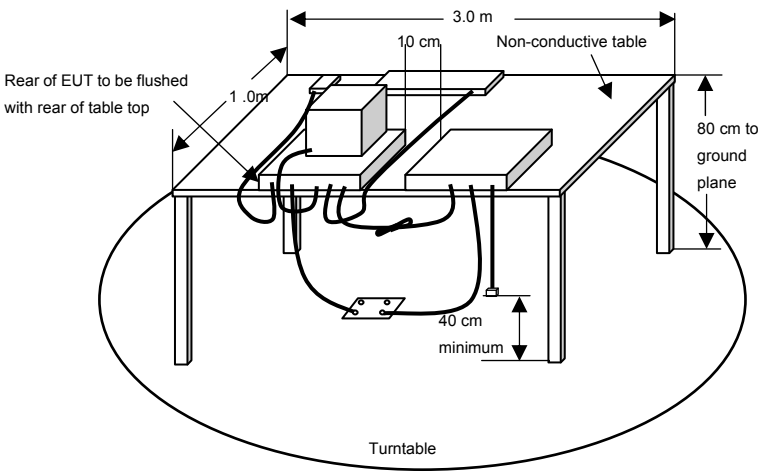


Diagram of the measuring instruments (30 – 1000 MHz)

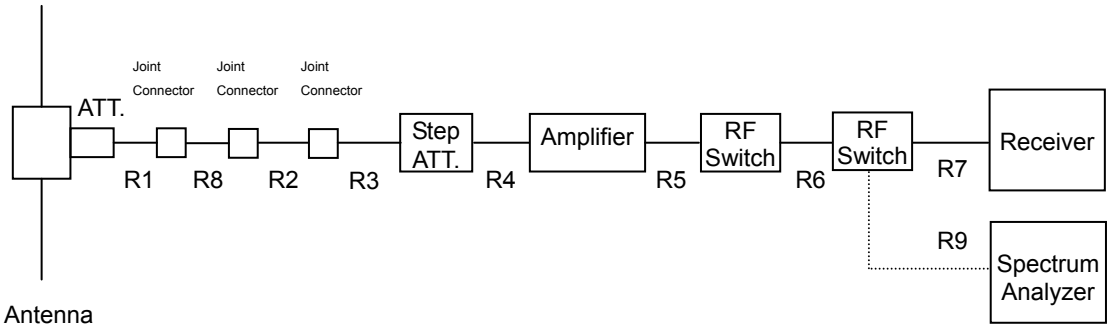
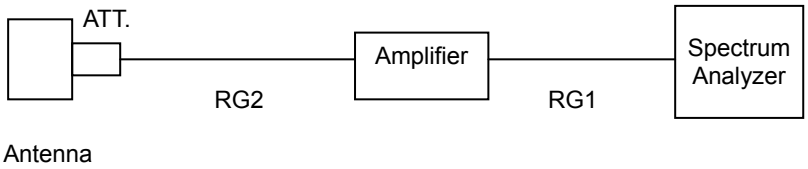


Diagram of the measuring instruments (Above 1000 MHz)



Setting for the instruments

Frequency [MHz]	Instrument	Detector Function	Resolution Bandwidth	Video Bandwidth
30 – 1000	Receiver	Quasi Peak	120 kHz	N/A
Above 1000	Spectrum Analyzer	Peak	1 MHz	1 MHz
		Average	1 MHz	10 Hz

[Preliminary Measurement]
EUT is tested on all operating conditions.
The spectrum analyzer is set max-hold mode and swept during turntable was rotated 0 to 360 degree,
And find the worst emission conditions in configuration, operating mode, or ambient noise notation.

[Final Measurement]
The EUT operated in the worst emission condition found by the preliminary test.
The turntable azimuth (EUT direction) and antenna height are adjusted the position so that maximum field strength is obtained for each frequency spectrum to be measured.
The equipment and cables are arranged or manipulated within the range of the test standard in the above condition. At least six highest spectrums are measured by the test receiver (quasi-peak) and spectrum analyzer (peak and average). When the uncertain result was obtained (30 – 1000 MHz), the measurement is retried by using the half wave dipole antenna instead of the broadband antenna.

SECTION 9. MEASUREMENT UNCERTAINTY

Radiated disturbance at 3m	U_{lab}	U_{cispr}
30 MHz – 1000 MHz	3.57 dB	5.19 dB
Above 1 GHz CISPR22	N/A	
Above 1 GHz ANSI 63.4	4.24 dB	
Radiated disturbance at 10m		
30 MHz – 1000 MHz	3.73 dB	5.06 dB
Above 1 GHz ANSI 63.4	4.24 dB	
Radiated disturbance at 30m		
	N/A	5.02 dB
Radiated disturbance (power)		
11.7 GHz – 12.7 GHz	N/A	Nil
Conducted disturbance at mains terminals		
9 kHz – 150 kHz	2.70 dB	3.97 dB
150 kHz – 30 MHz		3.60 dB
Conducted disturbance at telecommunication ports (voltage)		
9 kHz – 30 MHz	2.70 dB	Nil
Conducted disturbance at telecommunication ports (current)		
9 kHz – 30 MHz	2.81 dB	Nil
Conducted disturbance at terminals		
150 kHz – 30 MHz	2.74 dB	Nil
Disturbance power		
30 MHz – 300 MHz	2.94 dB	4.45 dB

The above expanded instrumentation uncertainty, $U_{lab.}$, is estimated in accordance with CISPR 16-4-2.
Traceability to national standard in SI units is ensured with these values.
Compliance with the limits in this standard are determined without in consideration of the measurement uncertainty of the measurement instrumentation.

SECTION 10. EVALUATION OF TEST RESULTS

10.1 Conducted disturbance at mains terminals

10.1.1 RX mode (0.03MHz :ANT1)

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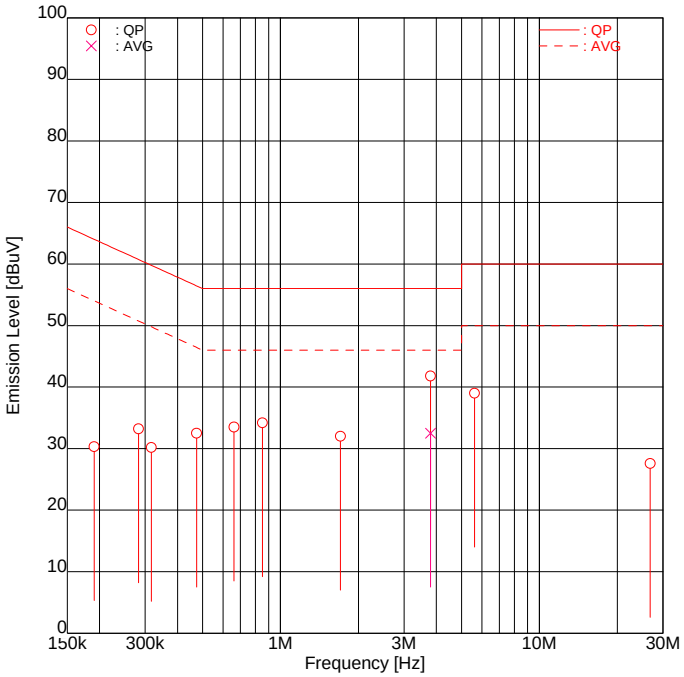
Tochigi No.2 Test Site

Conducted Voltages on Mains Port

APPLICANT	: Kenwood Corporation
EUT NAME	: HF/50MHz ALL MODE TRANSCEIVER
MODEL NO.	: TS-590S
SERIAL NO.	: None
TEST MODE	: RX mode (0.03MHz:ANT1)
POWER SOURCE	: DC 13.8 V
DATE TESTED	: Jul 02 2010
FILE NO.	: JT10070002
REGULATION	: FCC Part15B Class B
TEST METHOD	: ANSI C63.4-2003
TEMPERATURE	: 24.0 [degC]
HUMIDITY	: 50.0 [%]
NOTE	:

ENGINEER : Atsuyuki Morishima



[No]	FREQUENCY [MHz]	MODE	READING [dBuV] Line1	READING [dBuV] Line2	FACTOR [dB] Line1	FACTOR [dB] Line2	EMISSION [dBuV] Line1	EMISSION [dBuV] Line2	LIMIT [dBuV]	MARGIN [dB] Line1	MARGIN [dB] Line2
1	0.1904	QP	19.2	19.6	10.7	10.7	29.9	30.3	64.0	34.1	33.7
2	0.2830	QP	22.5	21.1	10.7	10.7	33.2	31.8	60.7	27.5	28.9
3	0.3169	QP	19.5	12.8	10.7	10.7	30.2	23.5	59.8	29.6	36.3
4	0.4744	QP	21.7	21.8	10.7	10.7	32.4	32.5	56.4	24.0	23.9
5	0.6617	QP	21.7	22.8	10.7	10.7	32.4	33.5	56.0	23.6	22.5
6	0.8513	QP	21.5	23.5	10.7	10.7	32.2	34.2	56.0	23.8	21.8
7	1.7056	QP	21.3	20.4	10.7	10.7	32.0	31.1	56.0	24.0	24.9
8	3.7933	QP	28.5	30.8	11.0	11.0	39.5	41.8	56.0	16.5	14.2
9	3.7933	AVG	19.2	21.5	11.0	11.0	30.2	32.5	46.0	15.8	**13.5**
10	5.6107	QP	28.0	25.7	11.0	11.0	39.0	36.7	60.0	21.0	23.3
11	26.7944	QP	12.5	15.9	11.5	11.7	24.0	27.6	60.0	36.0	32.4

Higher six points are underlined.
Other frequencies : Below the FCC Part15B Class B limit
Emisson Level = Read + Factor(LISN,Pad,Cable)

emiT 3, 0, 0, 0

10.1.2 RX mode (30.000MHz :ANT1)

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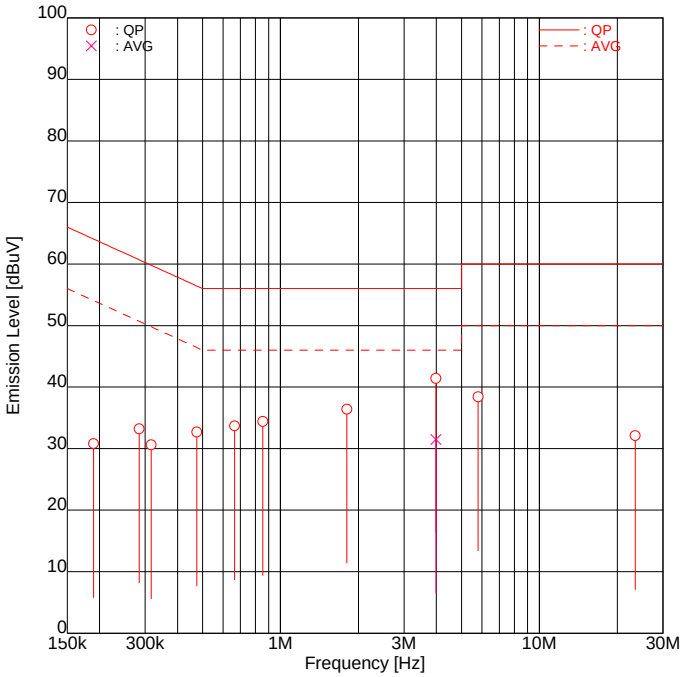
Tochigi No.2 Test Site

Conducted Voltages on Mains Port

APPLICANT	: Kenwood Corporation
EUT NAME	: HF/50MHz ALL MODE TRANSCEIVER
MODEL NO.	: TS-590S
SERIAL NO.	: None
TEST MODE	: RX mode (30.000MHz:ANT1)
POWER SOURCE	: DC 13.8 V
DATE TESTED	: Jul 02 2010
FILE NO.	: JT10070002
REGULATION	: FCC Part15B Class B
TEST METHOD	: ANSI C63.4-2003
TEMPERATURE	: 24.0 [degC]
HUMIDITY	: 50.0 [%]
NOTE	:

ENGINEER : Atsuyuki Morishima



[No]	FREQUENCY [MHz]	MODE	READING [dBuV] Line1	READING [dBuV] Line2	FACTOR [dB] Line1	FACTOR [dB] Line2	EMISSION [dBuV] Line1	EMISSION [dBuV] Line2	LIMIT [dBuV]	MARGIN [dB] Line1	MARGIN [dB] Line2
1	0.1894	QP	19.9	20.1	10.7	10.7	30.6	30.8	64.1	33.5	33.3
2	0.2843	QP	22.5	21.1	10.7	10.7	33.2	31.8	60.7	27.5	28.9
3	0.3162	QP	19.9	13.9	10.7	10.7	30.6	24.6	59.8	29.2	35.2
4	0.4746	QP	21.8	22.0	10.7	10.7	32.5	32.7	56.4	23.9	23.7
5	0.6643	QP	21.7	23.0	10.7	10.7	32.4	33.7	56.0	23.6	22.3
6	0.8540	QP	21.5	23.7	10.7	10.7	32.2	34.4	56.0	23.8	21.6
7	1.8041	QP	18.0	25.7	10.7	10.7	28.7	36.4	56.0	27.3	19.6
8	3.9819	QP	27.4	30.4	11.0	11.0	38.4	41.4	56.0	17.6	14.6
9	3.9819	AVG	17.5	20.5	11.0	11.0	28.5	31.5	46.0	17.5	**14.5**
10	5.8029	QP	27.4	27.2	11.0	11.0	38.4	38.2	60.0	21.6	21.8
11	23.4655	QP	15.5	20.4	11.5	11.7	27.0	32.1	60.0	33.0	27.9

Higher six points are underlined.
Other frequencies : Below the FCC Part15B Class B limit
Emisson Level = Read + Factor(LISN,Pad,Cable)

emiT 3, 0, 0, 0

10.1.3 RX mode (60.000MHz :ANT1)

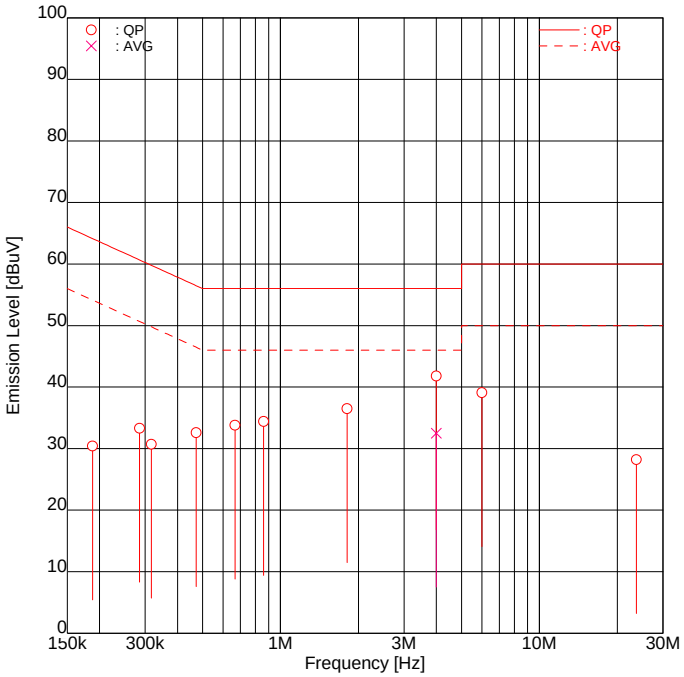
Intertek Japan K.K.

Tochigi No.2 Test Site

Conducted Voltages on Mains Port

APPLICANT	: Kenwood Corporation
EUT NAME	: HF/50MHz ALL MODE TRANSCEIVER
MODEL NO.	: TS-590S
SERIAL NO.	: None
TEST MODE	: RX mode (60.000MHz:ANT1)
POWER SOURCE	: DC 13.8 V
DATE TESTED	: Jul 02 2010
FILE NO.	: JT10070002
REGULATION	: FCC Part15B Class B
TEST METHOD	: ANSI C63.4-2003
TEMPERATURE	: 24.0 [degC]
HUMIDITY	: 50.0 [%]
NOTE	:

ENGINEER : Atsuyuki Morishima



[No]	FREQUENCY [MHz]	MODE	READING [dBuV] Line1	READING [dBuV] Line2	FACTOR [dB] Line1	FACTOR [dB] Line2	EMISSION [dBuV] Line1	EMISSION [dBuV] Line2	LIMIT [dBuV]	MARGIN [dB] Line1	MARGIN [dB] Line2
1	0.1880	QP	19.5	19.7	10.7	10.7	30.2	30.4	64.1	33.9	33.7
2	0.2856	QP	22.6	21.3	10.7	10.7	33.3	32.0	60.7	27.4	28.7
3	0.3173	QP	20.0	14.2	10.7	10.7	30.7	24.9	59.8	29.1	34.9
4	0.4723	QP	21.6	21.9	10.7	10.7	32.3	32.6	56.5	24.2	23.9
5	0.6674	QP	21.9	23.1	10.7	10.7	32.6	33.8	56.0	23.4	22.2
6	0.8605	QP	21.5	23.7	10.7	10.7	32.2	34.4	56.0	23.8	21.6
7	1.8065	QP	18.2	25.8	10.7	10.7	28.9	36.5	56.0	27.1	19.5
8	3.9980	QP	27.9	30.8	11.0	11.0	38.9	41.8	56.0	17.1	14.2
9	3.9980	AVG	18.7	21.5	11.0	11.0	29.7	32.5	46.0	16.3	**13.5**
10	5.9987	QP	25.8	28.1	11.0	11.0	36.8	39.1	60.0	23.2	20.9
11	23.6936	QP	11.5	16.5	11.5	11.7	23.0	28.2	60.0	37.0	31.8

Higher six points are underlined.
Other frequencies : Below the FCC Part15B Class B limit
Emisson Level = Read + Factor(LISN,Pad,Cable)

emiT 3, 0, 0, 0

10.2 Radiated disturbance

10.2.1 RX mode (0.03MHz :ANT1) [30 - 1000MHz]

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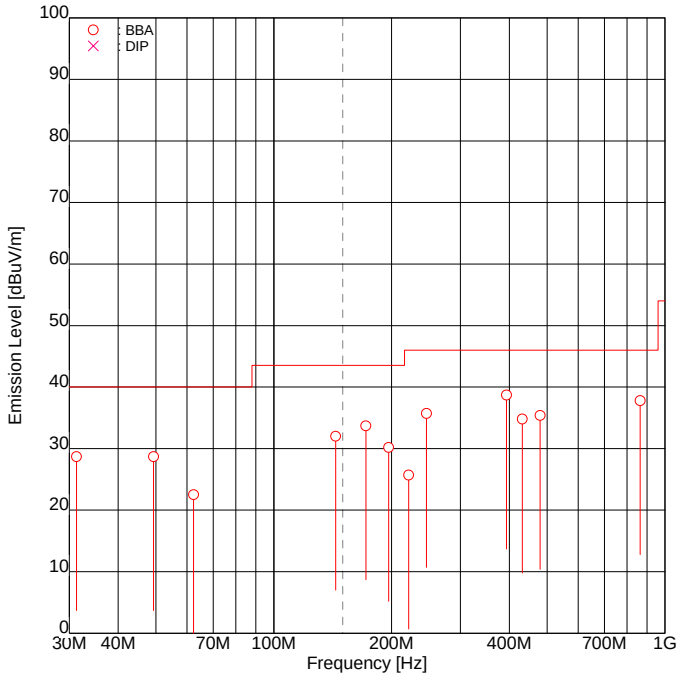
Tochigi No.2 Test Site

Radiated Electric Field

APPLICANT	: Kenwood Corporation
EUT NAME	: HF/50MHz ALL MODE TRANSCEIVER
MODEL NO.	: TS-590S
SERIAL NO.	: None
TEST MODE	: RX mode (0.03MHz:ANT1)
POWER SOURCE	: DC 13.8 V
DATE TESTED	: Jul 05 2010
FILE NO.	: JT10070002
REGULATION	: FCC Part15B Class B
TEST METHOD	: ANSI C63.4-2003
DISTANCE	: 3.00 [m]
TEMPERATURE	: 25.0 [degC]
HUMIDITY	: 69.0 [%]
NOTE	:

ENGINEER : Atsuyuki Morishima



[No]	FREQUENCY [MHz]	ANT.	READING [dBuV] Hori	READING [dBuV] Vert	FACTOR [dB/m] Hori	FACTOR [dB/m] Vert	EMISSION [dBuV/m] Hori	EMISSION [dBuV/m] Vert	LIMIT [dBuV/m]	MARGIN [dB] Hori	MARGIN [dB] Vert
1	31.30	BBA	-	36.0	-7.3	-7.3	-	28.7	40.0	-	11.3
2	49.27	BBA	34.0	-	-5.3	-5.3	28.7	-	40.0	11.3	-
3	62.40	BBA	-	28.2	-5.7	-5.7	-	22.5	40.0	-	17.5
4	144.02	BBA	36.3	-	-4.3	-4.3	32.0	-	43.5	11.5	-
5	172.04	BBA	-	38.2	-4.5	-4.5	-	33.7	43.5	-	9.8
6	196.61	BBA	32.2	36.1	-5.9	-5.9	26.3	30.2	43.5	17.2	13.3
7	221.19	BBA	30.8	28.2	-5.1	-5.1	25.7	23.1	46.0	20.3	22.9
8	245.77	BBA	37.2	39.7	-4.0	-4.0	33.2	35.7	46.0	12.8	10.3
9	393.60	BBA	38.4	35.6	0.3	0.3	38.7	35.9	46.0	**7.3**	10.1
10	432.05	BBA	33.6	-	1.2	1.2	34.8	-	46.0	11.2	-
11	480.06	BBA	33.1	-	2.3	2.3	35.4	-	46.0	10.6	-
12	864.12	BBA	25.5	27.2	10.6	10.6	36.1	37.8	46.0	9.9	8.2

Higher six points are underlined.
Other frequencies : Below the FCC Part15B Class B limit
Emisson Level = Read + Factor(Antenna,Antenna Pad,Cable,Preamp)
ANT. : Used antenna(BBA = Broadband antenna, DIP = Dipole antenna)

emiT 3, 0, 0, 0

10.2.2 RX mode (0.03MHz :ANT1) [1000 - 2000MHz]

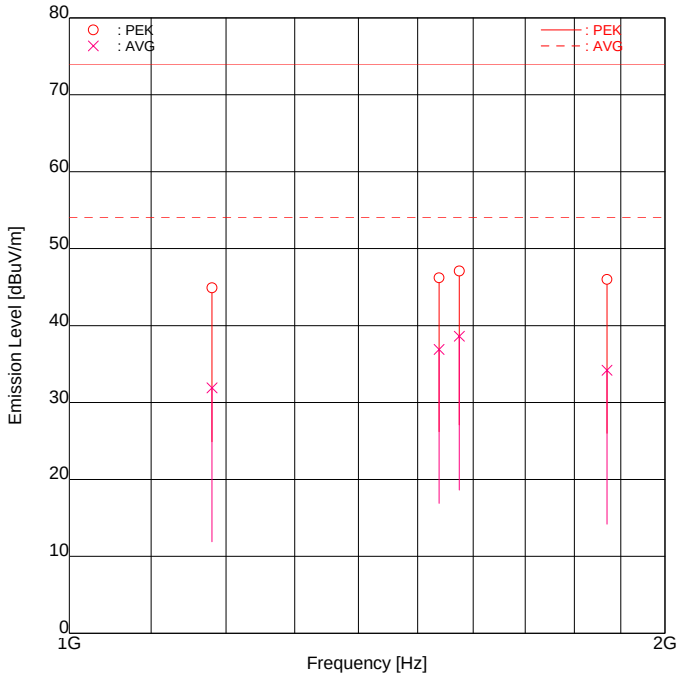
Intertek Japan K.K.

Tochigi No.2 Test Site

Radiated Electric Field

APPLICANT	: Kenwood Corporation
EUT NAME	: HF/50MHz ALL MODE TRANSCEIVER
MODEL NO.	: TS-590S
SERIAL NO.	: None
TEST MODE	: RX mode (0.03MHz:ANT1)
POWER SOURCE	: DC 13.8 V
DATE TESTED	: Jul 06 2010
FILE NO.	: JT10070002
REGULATION	: FCC Part15B Class B
TEST METHOD	: ANSI C63.4-2003
DISTANCE	: 3.00 [m]
TEMPERATURE	: 23.0 [degC]
HUMIDITY	: 69.0 [%]
NOTE	:

ENGINEER : Atsuyuki Morishima



[No]	FREQUENCY [MHz]	MODE	READING [dBuV] Hori	READING [dBuV] Vert	FACTOR [dB] Hori	FACTOR [dB] Vert	EMISSION [dBuV/m] Hori	EMISSION [dBuV/m] Vert	LIMIT [dBuV/m]	MARGIN [dB] Hori	MARGIN [dB] Vert
1	1180.83	PEK	44.2	47.3	-2.4	-2.4	41.8	44.9	74.0	32.2	29.1
2	1180.83	AVG	33.5	34.3	-2.4	-2.4	31.1	31.9	54.0	22.9	22.1
3	1537.82	PEK	47.0	42.5	-0.8	-0.8	46.2	41.7	74.0	27.8	32.3
4	1537.82	AVG	37.7	34.9	-0.8	-0.8	36.9	34.1	54.0	17.1	19.9
5	1574.33	PEK	47.2	47.8	-0.7	-0.7	46.5	47.1	74.0	27.5	26.9
6	1574.33	AVG	36.8	39.3	-0.7	-0.7	36.1	38.6	54.0	17.9	**15.4**
7	1869.63	PEK	45.1	44.7	0.9	0.9	46.0	45.6	74.0	28.0	28.4
8	1869.63	AVG	32.9	33.3	0.9	0.9	33.8	34.2	54.0	20.2	19.8

Higher six points are underlined.
Other frequencies : Below the FCC Part15B Class B limit
Emisson Level = Read + Factor(Antenna,Antenna Pad,Cable,Preamp)
ANT. : Used antenna(BBA = Broadband antenna, DIP = Dipole antenna)

emiT 3, 0, 0, 0

10.2.3 RX mode (30.000MHz :ANT1) [30 – 1000MHz]

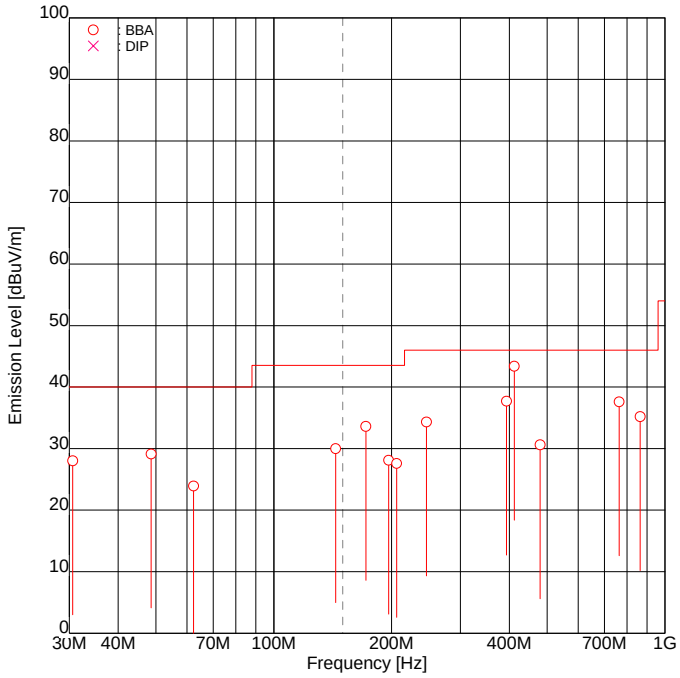
Intertek Japan K.K.

Tochigi No.2 Test Site

Radiated Electric Field

APPLICANT	: Kenwood Corporation
EUT NAME	: HF/50MHz ALL MODE TRANSCEIVER
MODEL NO.	: TS-590S
SERIAL NO.	: None
TEST MODE	: RX mode (30.000MHz:ANT1)
POWER SOURCE	: DC 13.8 V
DATE TESTED	: Jul 05 2010
FILE NO.	: JT10070002
REGULATION	: FCC Part15B Class B
TEST METHOD	: ANSI C63.4-2003
DISTANCE	: 3.00 [m]
TEMPERATURE	: 25.0 [degC]
HUMIDITY	: 69.0 [%]
NOTE	:

ENGINEER : Atsuyuki Morishima



[No]	FREQUENCY [MHz]	ANT.	READING [dBuV] Hori	READING [dBuV] Vert	FACTOR [dB/m] Hori	FACTOR [dB/m] Vert	EMISSION [dBuV/m] Hori	EMISSION [dBuV/m] Vert	LIMIT [dBuV/m]	MARGIN [dB] Hori	MARGIN [dB] Vert
1	30.63	BBA	-	35.4	-7.4	-7.4	-	28.0	40.0	-	12.0
2	48.61	BBA	34.4	-	-5.3	-5.3	29.1	-	40.0	10.9	-
3	62.40	BBA	-	29.6	-5.7	-5.7	-	23.9	40.0	-	16.1
4	144.02	BBA	34.3	-	-4.3	-4.3	30.0	-	43.5	13.5	-
5	172.04	BBA	-	38.1	-4.5	-4.5	-	33.6	43.5	-	9.9
6	196.80	BBA	34.0	33.0	-5.9	-5.9	28.1	27.1	43.5	15.4	16.4
7	206.19	BBA	33.5	32.2	-5.9	-5.9	27.6	26.3	43.5	15.9	17.2
8	245.77	BBA	38.3	37.2	-4.0	-4.0	34.3	33.2	46.0	11.7	12.8
9	393.60	BBA	35.9	37.4	0.3	0.3	36.2	37.7	46.0	9.8	8.3
10	412.37	BBA	42.7	42.2	0.7	0.7	43.4	42.9	46.0	**2.6**	3.1
11	480.06	BBA	28.3	-	2.3	2.3	30.6	-	46.0	15.4	-
12	764.36	BBA	-	28.9	8.7	8.7	-	37.6	46.0	-	8.4
13	864.12	BBA	24.1	24.6	10.6	10.6	34.7	35.2	46.0	11.3	10.8

Higher six points are underlined.
Other frequencies : Below the FCC Part15B Class B limit
Emisson Level = Read + Factor(Antenna,Antenna Pad,Cable,Preamp)
ANT. : Used antenna(BBA = Broadband antenna, DIP = Dipole antenna)

emiT 3, 0, 0, 0

10.2.4 RX mode (30.000MHz :ANT1) [1000 – 2000MHz]

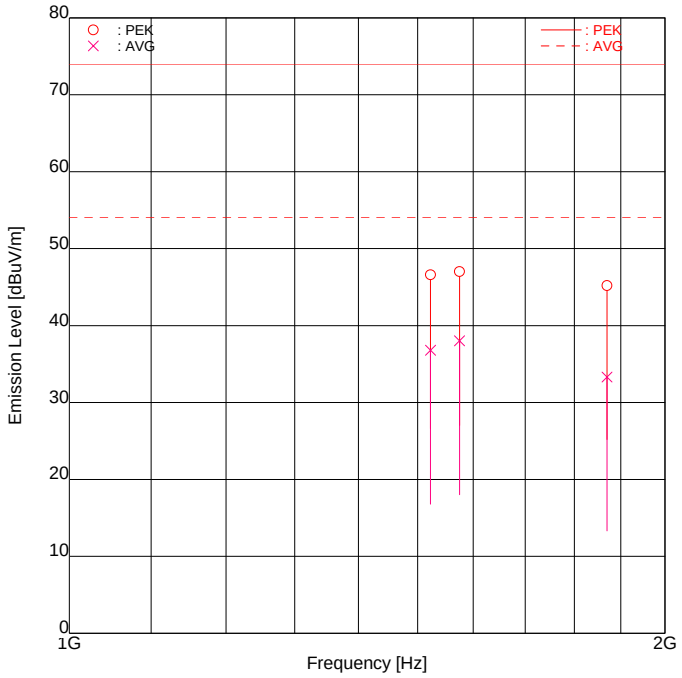
Intertek Japan K.K.

Tochigi No.2 Test Site

Radiated Electric Field

APPLICANT	: Kenwood Corporation
EUT NAME	: HF/50MHz ALL MODE TRANSCEIVER
MODEL NO.	: TS-590S
SERIAL NO.	: None
TEST MODE	: RX mode (30.000MHz:ANT1)
POWER SOURCE	: DC 13.8 V
DATE TESTED	: Jul 06 2010
FILE NO.	: JT10070002
REGULATION	: FCC Part15B Class B
TEST METHOD	: ANSI C63.4-2003
DISTANCE	: 3.00 [m]
TEMPERATURE	: 23.0 [degC]
HUMIDITY	: 69.0 [%]
NOTE	:

ENGINEER : Atsuyuki Morishima



[No]	FREQUENCY [MHz]	MODE	READING [dBuV] Hori	READING [dBuV] Vert	FACTOR [dB] Hori	FACTOR [dB] Vert	EMISSION [dBuV/m] Hori	EMISSION [dBuV/m] Vert	LIMIT [dBuV/m]	MARGIN [dB] Hori	MARGIN [dB] Vert
1	1522.63	PEK	47.4	47.5	-0.9	-0.9	46.5	46.6	74.0	27.5	27.4
2	1522.63	AVG	37.7	36.7	-0.9	-0.9	36.8	35.8	54.0	17.2	18.2
3	1574.67	PEK	47.7	47.4	-0.7	-0.7	47.0	46.7	74.0	27.0	27.3
4	1574.67	AVG	38.7	38.1	-0.7	-0.7	38.0	37.4	54.0	**16.0**	16.6
5	1869.72	PEK	44.3	44.2	0.9	0.9	45.2	45.1	74.0	28.8	28.9
6	1869.72	AVG	31.7	32.4	0.9	0.9	32.6	33.3	54.0	21.4	20.7

Higher six points are underlined.
Other frequencies : Below the FCC Part15B Class B limit
Emisson Level = Read + Factor(Antenna,Antenna Pad,Cable,Preamp)
ANT. : Used antenna(BBA = Broadband antenna, DIP = Dipole antenna)

emiT 3, 0, 0, 0

10.2.5 RX mode (60.000MHz :ANT1) [30 – 1000MHz]

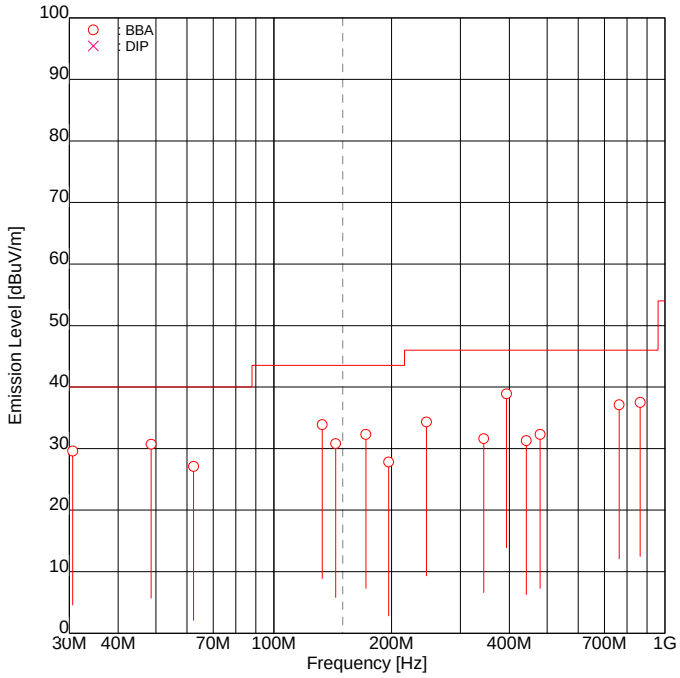
Intertek Japan K.K.

Tochigi No.2 Test Site

Radiated Electric Field

APPLICANT	: Kenwood Corporation
EUT NAME	: HF/50MHz ALL MODE TRANSCEIVER
MODEL NO.	: TS-590S
SERIAL NO.	: None
TEST MODE	: RX mode (60.000MHz:ANT1)
POWER SOURCE	: DC 13.8 V
DATE TESTED	: Jul 05 2010
FILE NO.	: JT10070002
REGULATION	: FCC Part15B Class B
TEST METHOD	: ANSI C63.4-2003
DISTANCE	: 3.00 [m]
TEMPERATURE	: 25.0 [degC]
HUMIDITY	: 69.0 [%]
NOTE	:

ENGINEER : Atsuyuki Morishima



[No]	FREQUENCY [MHz]	ANT.	READING [dBuV] Hori	READING [dBuV] Vert	FACTOR [dB/m] Hori	FACTOR [dB/m] Vert	EMISSION [dBuV/m] Hori	EMISSION [dBuV/m] Vert	LIMIT [dBuV/m]	MARGIN [dB] Hori	MARGIN [dB] Vert
1	30.63	BBA	-	37.0	-7.4	-7.4	-	29.6	40.0	-	10.4
2	48.61	BBA	36.0	-	-5.3	-5.3	30.7	-	40.0	9.3	-
3	62.40	BBA	-	32.8	-5.7	-5.7	-	27.1	40.0	-	12.9
4	133.10	BBA	39.1	38.3	-5.2	-5.2	33.9	33.1	43.5	9.6	10.4
5	144.02	BBA	35.1	-	-4.3	-4.3	30.8	-	43.5	12.7	-
6	172.04	BBA	33.4	36.8	-4.5	-4.5	28.9	32.3	43.5	14.6	11.2
7	196.80	BBA	33.7	31.3	-5.9	-5.9	27.8	25.4	43.5	15.7	18.1
8	245.77	BBA	36.1	38.3	-4.0	-4.0	32.1	34.3	46.0	13.9	11.7
9	344.07	BBA	32.1	-	-0.5	-0.5	31.6	-	46.0	14.4	-
10	393.60	BBA	38.6	37.1	0.3	0.3	38.9	37.4	46.0	**7.1**	8.6
11	442.38	BBA	-	29.9	1.4	1.4	-	31.3	46.0	-	14.7
12	480.06	BBA	30.0	-	2.3	2.3	32.3	-	46.0	13.7	-
13	764.36	BBA	-	28.4	8.7	8.7	-	37.1	46.0	-	8.9
14	864.12	BBA	24.9	26.9	10.6	10.6	35.5	37.5	46.0	10.5	8.5

Higher six points are underlined.
Other frequencies : Below the FCC Part15B Class B limit
Emisson Level = Read + Factor(Antenna,Antenna Pad,Cable,Preamp)
ANT. : Used antenna(BBA = Broadband antenna, DIP = Dipole antenna)

emiT 3, 0, 0, 0

10.2.6 RX mode (60.000MHz :ANT1) [1000 – 2000MHz]

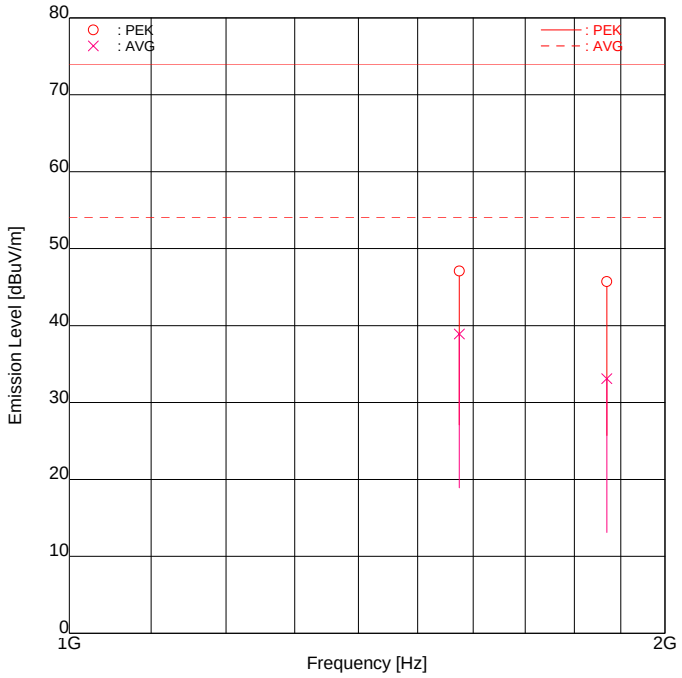
Intertek Japan K.K.

Tochigi No.2 Test Site

Radiated Electric Field

APPLICANT	: Kenwood Corporation
EUT NAME	: HF/50MHz ALL MODE TRANSCEIVER
MODEL NO.	: TS-590S
SERIAL NO.	: None
TEST MODE	: RX mode (60.000MHz:ANT1)
POWER SOURCE	: DC 13.8 V
DATE TESTED	: Jul 06 2010
FILE NO.	: JT10070002
REGULATION	: FCC Part15B Class B
TEST METHOD	: ANSI C63.4-2003
DISTANCE	: 3.00 [m]
TEMPERATURE	: 23.0 [degC]
HUMIDITY	: 69.0 [%]
NOTE	:

ENGINEER : Atsuyuki Morishima



[No]	FREQUENCY [MHz]	MODE	READING [dBuV] Hori	READING [dBuV] Vert	FACTOR [dB] Hori	FACTOR [dB] Vert	EMISSION [dBuV/m] Hori	EMISSION [dBuV/m] Vert	LIMIT [dBuV/m]	MARGIN [dB] Hori	MARGIN [dB] Vert
1	1574.38	PEK	47.6	47.8	-0.7	-0.7	46.9	47.1	74.0	27.1	26.9
2	1574.38	AVG	39.2	39.6	-0.7	-0.7	38.5	38.9	54.0	15.5	**15.1**
3	1869.16	PEK	44.7	44.8	0.9	0.9	45.6	45.7	74.0	28.4	28.3
4	1869.16	AVG	31.8	32.2	0.9	0.9	32.7	33.1	54.0	21.3	20.9

Higher six points are underlined.
Other frequencies : Below the FCC Part15B Class B limit
Emisson Level = Read + Factor(Antenna,Antenna Pad,Cable,Preamp)
ANT. : Used antenna(BBA = Broadband antenna, DIP = Dipole antenna)

emiT 3, 0, 0, 0

SECTION 11. LIST OF MEASURING INSTRUMENTS

Instrument	Model No.	Serial No.	Manufacturer	Cal. date	Due date
Conducted disturbance at mains terminals					
LISN (EUT)	ESH2-Z5	892377/021	ROHDE & SCHWARZ	Jul. 06, 09	Jul. 31, 10
10dB Attenuator	CFA-01(BPJ-10)	None	TAMAGAWA	May 13, 10	May 31, 11
LISN (Peripheral)	KNW-242	8-851-27	KYORITSU	Jul. 14, 09	Jul. 31, 10
50Ω Termination	CT-01	None	TAMAGAWA	Jul. 14, 09	Jul. 31, 10
Coaxial cable(C1)	5D-2W(6.0 m)	2CL01a	INTERTEK	May 13, 10	May 31, 11
Coaxial cable(C2)	RG-5A/U(7.0 m)	2CL02	INTERTEK	May 13, 10	May 31, 11
Coaxial cable(C3)	5D-2W(0.2 m)	2CL03	INTERTEK	May 13, 10	May 31, 11
Coaxial cable(C4)	5D-2W(1.7 m)	2CL04	INTERTEK	May 13, 10	May 31, 11
Radiated disturbance					
Broad Band antenna	VULB9168	218	Schwarzbeck	Mar. 31, 10	Mar. 31, 11
6dB Attenuator	CFA-01(NPJ-6)	None	TAMAGAWA	May 13, 10	May 31, 11
Step Attenuator	8494B	2805A14563	HEWLETT PACKARD	May 13, 10	May 31, 11
Amplifier	8447D	2944A06342	HEWLETT PACKARD	May 13, 10	May 31, 11
Spectrum analyzer	8563E (Firmware Revision 971024)	3821A09565	HEWLETT PACKARD	Dec. 24, 09	Dec. 31, 10
Amplifier	8449B	3008A01182	HEWLETT PACKARD	Apr. 13, 10	Apr. 30, 11
Double ridged antenna	3115	9903-5699	EMCO	Apr. 21, 10	Apr. 30, 11
6dB Attenuator	8493C	75550	Agilent	Apr. 13, 10	Apr. 30, 11
Coaxial cable(R1)	5D-2W(10.0 m)	2R1001a	INTERTEK	May 13, 10	May 31, 11
Coaxial cable(R2)	RG-177/U(20.0 m)	2R1002	INTERTEK	May 13, 10	May 31, 11
Coaxial cable(R3)	RG-5A/U(1.3 m)	2R1003	INTERTEK	May 13, 10	May 31, 11
Coaxial cable(R4)	RG-5A/U(0.2 m)	2R1004	INTERTEK	May 13, 10	May 31, 11
Coaxial cable(R5)	5D-2W(0.7 m)	2R1005	INTERTEK	May 13, 10	May 31, 11
Coaxial cable(R6)	5D-2W(0.2 m)	2R1006	INTERTEK	May 13, 10	May 31, 11
Coaxial cable(R7)	5D-2W(1.7 m)	2R1007	INTERTEK	May 13, 10	May 31, 11
Coaxial cable(R8)	5D-2W(6.0 m)	2R1008a	INTERTEK	May 13, 10	May 31, 11
Coaxial cable(RG1)	SUCOFLEX(1.5 m)	290799/4	SUHNER	Apr. 13, 10	Apr. 30, 11
Coaxial cable(RG2)	SUCOFLEX(6.0 m)	290800/4	SUHNER	Apr. 13, 10	Apr. 30, 11
Site Attenuation				Aug. 18, 09	Aug. 31, 10
Common					
Test receiver	ESS (Firmware Version 1.07)	842886/013	ROHDE & SCHWARZ	Jan. 06, 10	Jan. 31, 11
RF Switch	ACX-150	None	INTERTEK	May 13, 10	May 31, 11
Testing Software	emiT (Version 3,0,0,0)				

Note: Test instruments are calibrated according to Quality Manual and Calibration Rules of Intertek Japan K.K.