

TEST REPORT

STANDARD : FCC Part 15B-Scanning Receiver
: Industry Canada RSS-215 Issue 2

Applicant	Testing Laboratory
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Equipment Type	HF/50MHz Transceiver
Category	Scanning Receiver
Trademark	YAESU
Model(s)	FT DX 5000MP
Serial No.	9N000005
Equipment Authorization	Certification (FCC ID : K6620361X61, IC : 511B-20361X61)
Test Result	Complied
Report Number	JT09120024(R1)
Report Issue Date	January 22, 2010

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The test report JT09120024 has been superseded by this test report.

Approved by



Kazuo Gokita
[Manager]

Tested by



Atsuyuki Morishima



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SECTION 1. GENERAL INFORMATION

TEST PERFORMED

Location	Tochigi No.2 Test Site
EUT Received	December 24, 2009
Date of Test	From December 24, 2009 to January 5, 2010
Standard Applied	FCC Part15B – Scanning Receiver Industry Canada RSS-215 Issue 2 * * It is not covered by accredited scope of VLAC.
Measurement methods	ANSI C63.4-2003
Test Procedure	Document number : RJP-EM001, RJP-EM003
Deviation from Standard(s)	None

Note : As for the ICES-003 “Digital Apparatus”, the EUT has been measured.

Refer to report No.“JT09120026(R1)”.

As for the FCC Part15B Class B “Peripherals”, the EUT has been measured.

Refer to report No.“JT09120025(R1)”.

QUALIFICATIONS OF TESTING LABORATORY

ACCREDITATION	SCOPE	LAB. CODE	Remarks
VLAC	EMC Testing	VLAC-008-5	JAPAN
BSMI	EMC Testing	SL2-IN-E-6017, SL2-A-E-6017	TAIWAN
FILING			
VCCI	EMC Testing	R-257, C-260, C-284, T-374, T-375 R-258, C-261, C-285, T-376, T-377 R-259, C-262, T-378	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 A:B:0.030MHz(ANT 1) mode (Power Line for DMU-2000) 8.0 dB (1.5971 MHz) AVG Rx A:B:60.000MHz(ANT 1) mode (Power Line for DMU-2000) 8.0 dB (1.5968 MHz) AVG
Radiated disturbance	Rx A:B:60.000MHz(ANT 1) mode 8.1 dB (33.30 MHz)
Conducted Power on Antenna Port (15.111)	VFO A SCAN(ANT 1) mode 7.6 dB(33.50 MHz)
38dB Rejection Test (15.121(b))	No frequency of response was detected – Passed-

Note : See Section 10 for details.

< Measurement data correction >

- * Conducted disturbance at mains terminals
 $\text{Emission Level [dB}\mu\text{V]} = \text{Meter Reading [dB}\mu\text{V]} + \text{Factor [dB]}$
 $\text{Margin [dB]} = \text{Limit [dB}\mu\text{V]} - \text{Emission Level [dB}\mu\text{V]}$
 $\text{* Factor} = \text{LISN Factor} + \text{Cable Loss} + \text{ATT}$
- * Radiated disturbance
 $\text{Emission Level [dB}\mu\text{V/m]} = \text{Meter Reading [dB}\mu\text{V]} + \text{Factor [dB/m]}$
 $\text{Margin [dB]} = \text{Limit [dB}\mu\text{V/m]} - \text{Emission Level [dB}\mu\text{V/m]}$
 $\text{* Factor} = \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain} + \text{ATT}$
 $(- \text{Distance Conversion Factor})$
- * Conducted Power on Antenna Port
 $\text{Emission Level [dB}\mu\text{V]} = \text{Meter Reading [dB}\mu\text{V]} + \text{Factor [dB]}$
 $\text{Margin [dB]} = \text{Limit [dB}\mu\text{V]} - \text{Emission Level [dB}\mu\text{V]}$
 $\text{* Factor} = \text{Pad} + \text{Cable Loss} - \text{Amplifier Gain}$

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	Notes	FCC ID
A1	HF/50MHz Transceiver	FTDx5000MP	9N000005	Vertex Standard	EUT	K6620361X61
A2	Data Management Unit	DMU-2000	7D060071	Vertex Standard	Option	DoC
A3	Microphone	MH-31B8	None	Vertex Standard	Accessory	N/A
A4	Remote Control Keypad	FH-2	None	Vertex Standard	Accessory	N/A
A5	Headphone	YH-77STA	None	Vertex Standard	Option	N/A
A6	Station Monitor	SM-5000	9N001	Vertex Standard	Accessory	DoC
A7	u-Tuning	MTU-160	6N004	Vertex Standard	Option	N/A
A8	u-Tuning	MTU-80/40	6N004	Vertex Standard	Option	N/A
A9	u-Tuning	MTU-30/20	6N004	Vertex Standard	Option	N/A
Rated Power : FT DX 5000MP : AC90-264 V, 50/60 Hz, 80 VA (RX), 720 VA (TX) DMU-2000 : AC100-240 V, 50/60 Hz, 50 VA						
Supplied Power : FT DX 5000MP : AC120 V, 60 Hz , DMU-2000 : AC120 V, 60 Hz						
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	Triple Conversion Super-heterodyne
Model of Operation	A1A, A3E, F3E, J3E

3.3 Intermediate Frequencies

1st	Main : 9.000 MHz (Upper), Sub : 40.455 MHz (Upper)
2nd	Main : 30 kHz SSB/CW, 24 kHz FM/AM, Sub : 455 kHz (Lower)
3rd	Sub : 30 kHz SSB/CW, 24 kHz FM/AM

3.4 Oscillator(s) / Crystal(s)

Base Clock	Operating Frequency	Board Name	Remarks
11.1 MHz	11.1 MHz	CNTL Unit	
18.432 MHz	18.432 MHz	DSP Unit	X7001
18.432 MHz	18.432 MHz	DSP Unit	X7501
400.000 MHz	9.030-69.000 MHz	Local Unit	VFO (A)
400.000 MHz	40.485-100.455 MHz	Local Unit	VFO (B)
40.000 MHz	425 kHz	Local Unit	SSB/CW
10.000 MHz	40.000 MHz	Local Unit	Reference OSC
133 MHz	667 MHz	EBC365LP6	DMU-2000 (Highest Frequency)

3.5 Port(s)/Connector(s)

Port Name	Connector Type	Connector Pin	Remarks
Mic.	FM214-8SMPT-NI	8 pin	Front
Phone	6 ϕ Stereo	1 pin	Front
KEY	6 ϕ Stereo	1 pin	Front
Mic.	RCA	1 pin	
ANT1, 2, 3, 4, RX	MR-S	1 pin	
RX OUT	BNC	1 pin	
CAT	D-sub	9 pin	
ROTATOR	Mini-DIN	6 pin	
EXT.ALC	RCA	1 pin	
BAND DATA	DIN	8 pin	
TX GND	RCA	1 pin	
TRV	RCA	1 pin	
PACKET	DIN	5 pin	
RTTY	DIN	4 pin	
AF OUT	3.5 ϕ Mono	1 pin	
EXT.SPKR	3.5 ϕ Mono	1 pin	
V-AF	3.5 ϕ Mono	1 pin	
PTT	RCA	1 pin	
+13.8V	RCA	1 pin	
REC	RCA	1 pin	
TX REC	RCA	1 pin	
IF OUT	RCA	1 pin	
REMOTE	3.5 ϕ Mono	1 pin	
u-Tune (TO)	RCA	1 pin	
u-Tune (FROM)	RCA	1 pin	
u-Tune	Mini-DIN	10 pin	
DMU	Mini-DIN	8 pin	
KEY	6 ϕ Stereo	1 pin	

3.6 Frequency Range of Measurements

	Required Measurement Frequency Range	Measured Frequency Range
Conducted disturbance at mains terminals	0.15 – 30 MHz	0.15 – 30 MHz
Radiated disturbance	30 – 5000 MHz	30 – 5000 MHz
Conducted Power on Antenna Port (15.111)	30 – 5000 MHz	30 – 5000 MHz
38dB Rejection Test (15.121(b))	0.030 – 60 MHz	0.030 – 60 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	CF Card	SDCFH-004 G-J61	BH090612757B	SanDisk		DoC
C	GPS Receiver	Etrex Venture	73800627	Germin International		DoC
D	Ext. Keyboard	RT7D00	TH-054EXM-371 71-19D-1655	DELL		AQ6- 7D0080COB
E	Ext. Display	E172FPb	None	DELL		DoC
F	Personal Computer	DMC	FXYKV1X	DELL		DoC
G	Display	E176FPb	None	DELL		DoC
H	Keyboard	SK-8115	None	DELL		DoC
I	Mouse	MO56UOA	E1900IT0	DELL		DoC
J	Printer	C8154AL	TH71Q5Z024	Hewlett Packard		Doc
K	AC Adapter	0957-2171	E151B100MU02L	Hewlett Packard		N/A
Supplied Power:						
E, F, G, K		AC120 V, 60 Hz				

SECTION 5. USED CABLE(S)

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

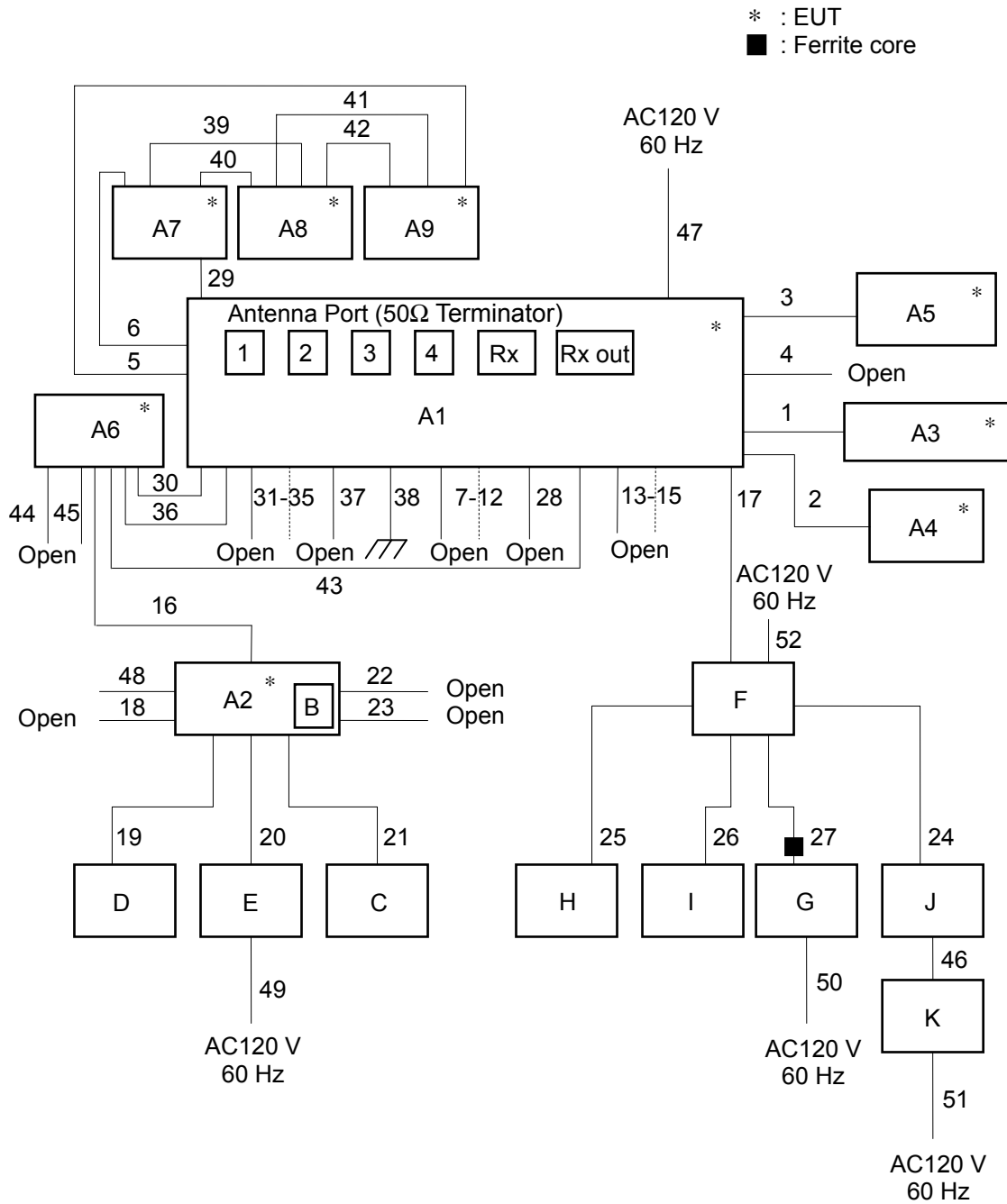
No.	Name	Length (m)	Shield	Metal Connector	Ferrite Core
1	Microphone cable	0.50	Yes	Metal	
2	Keypad (FH-2) cable	1.00	Yes	Metal	
3	Headphone cable	1.80	Yes	Metal	
4	KEY cable	0.60	Yes	Metal	
5	u-Tune (TO) cable	1.20	Yes	Metal	
6	u-Tune (FROM) cable	1.20	Yes	Metal	
7	ROTATOR cable	1.50	Yes	Metal	
8	LINER (BAND DATA) cable	2.00	Yes	Metal	
9	IF OUT cable	1.20	Yes	Metal	
10	RTTY cable	1.10	Yes	Metal	
11	PTT cable	1.50	Yes	Metal	
12	REC cable	2.00	Yes	Metal	
13	EXT. SPKR cable	1.00	Yes	Metal	
14	KEY cable	1.10	Yes	Metal	
15	u-Tune cable	1.10	Yes	Metal	
16	DMU cable	1.40	Yes	Metal	
17	CAT cable	1.80	Yes	Metal	
18	USB cable	1.00	Yes	Metal	
19	Ext. Keyboard cable	1.50	Yes	Metal	
20	Ext. Display cable	1.80	Yes	Metal	
21	COM (GPS) cable	2.00	Yes	Metal	
22	AUDIO IN cable	1.50	Yes	Metal	
23	AUDIO OUT cable	1.10	Yes	Metal	
24	Centronics cable	2.40	Yes	Metal	
25	Keyboard cable	2.00	Yes	Metal	
26	Mouse cable	1.80	Yes	Metal	
27	Display cable	1.80	Yes	Metal	Fixed x1
28	PKT cable	1.50	Yes	Metal	
29	u-Tune (CNTL) cable	1.10	Yes	Metal	
30	V-AF-SM-5000 cable	0.60	Yes	Metal	
31	AF-OUT cable	1.50	Yes	Metal	
32	Mic. cable	1.20	Yes	Metal	

33	EXT ALC cable	1.00	No	Metal	
34	TRV cable	1.10	No	Metal	
35	TX REQ cable	1.00	No	Metal	
36	+13.8V-SM5000 cable	0.60	Yes	Metal	
37	TX GND cable	1.90	No	Metal	
38	GND cable	1.50	No	N/A	
39	u-Tune (CNTL) cable	1.10	Yes	Metal	
40	u-Tune (RF) cable	1.10	Yes	Metal	
41	u-Tune (CNTL) cable	1.10	Yes	Metal	
42	u-Tune (RF) cable	1.10	Yes	Metal	
43	DMU-SM-5000 cable	0.60	Yes	Metal	
44	EXT SPKR cable	1.00	Yes	Metal	
45	EXT SPKR cable	1.00	Yes	Metal	
46	Power cable for Printer (DC)	1.70	No	No	
47	Power cable for FT dx 5000MP (AC)	2.20	No	No	
48	Power cable for DMU-2000 (AC)	1.40	No	No	
49	Power cable for Ext. Display (AC)	1.80	No	No	
50	Power cable for Display (AC)	1.80	No	No	
51	Power cable for Printer (AC)	2.00	No	No	
52	Power cable for Personal Computer (AC)	1.90	No	No	

Note : No. 27 cable is supplied together with Display (G).

SECTION 6. TEST CONFIGURATION

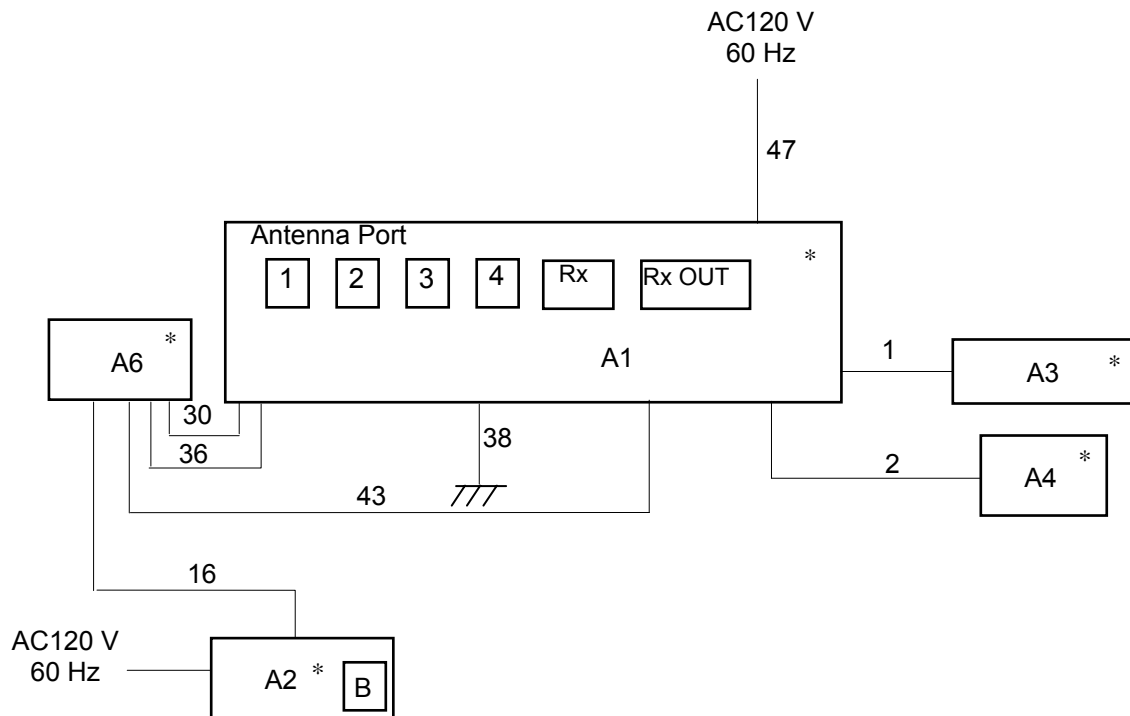
6.1 Conducted disturbance at mains terminals Radiated disturbance



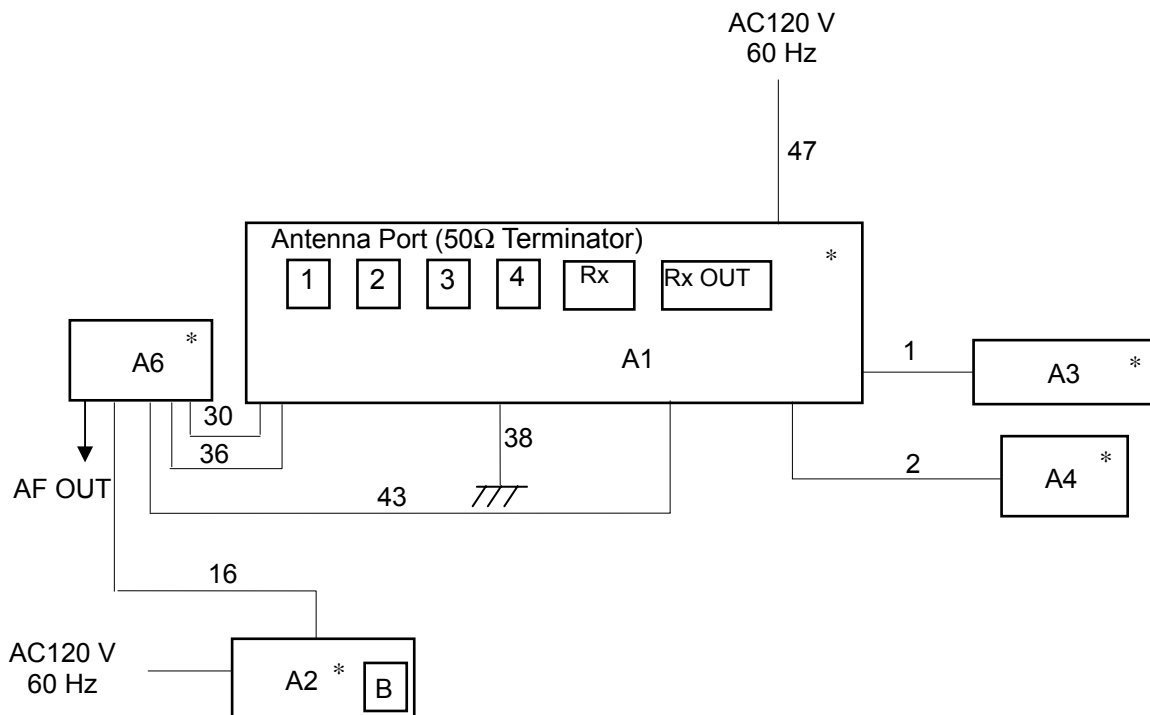
The symbols and numbers assigned to the equipments and cables on this diagram correspond to the ones in Sections 3 to 5.

6.2 Conducted Power on Antenna Port (15.111)

* :EUT



6.3 38dB Rejection Test (15.121(b))



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

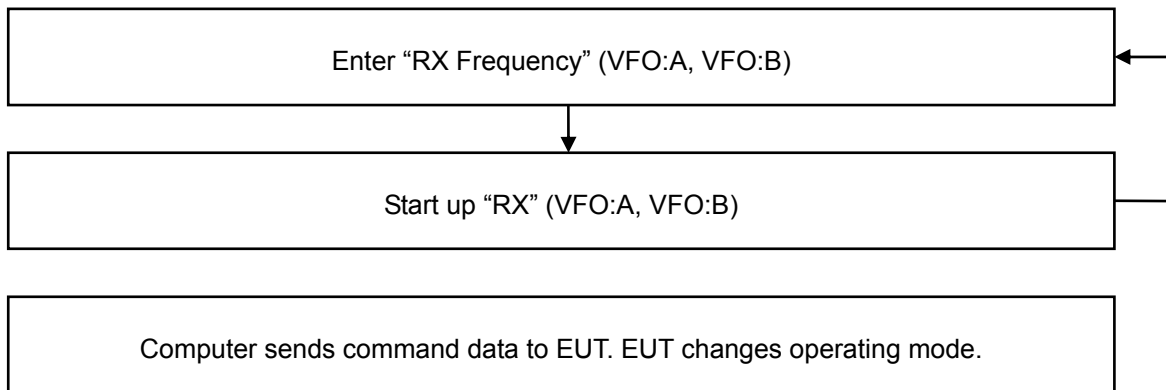
The test was carried out under RX mode and VFO SCAN mode.

EUT was examined in the operating conditions that had maximum emissions.

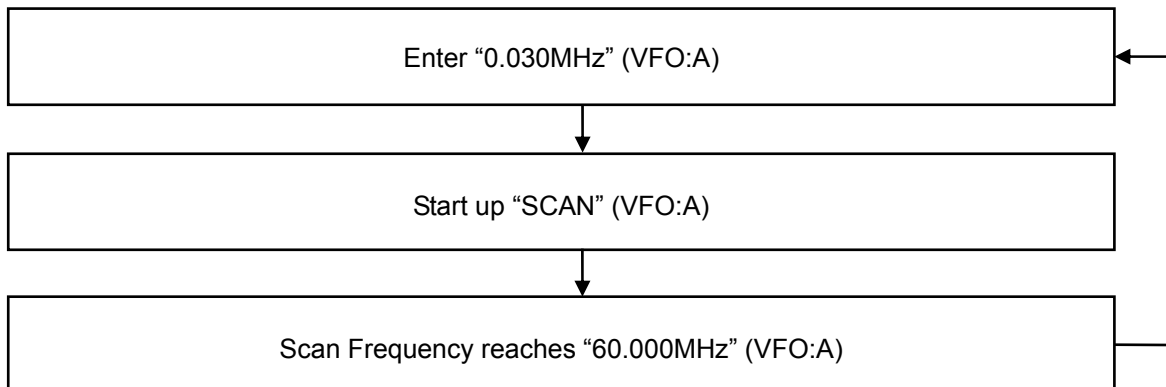
7.2 Operating Flow [RX mode and VFO SCAN mode]

Following operations were performed continuously.

7.2.1 RX mode



7.2.2 VFO SCAN mode

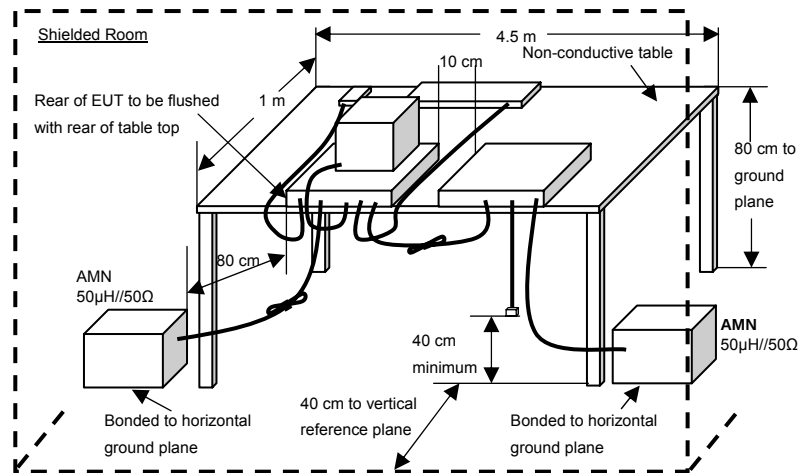


SECTION 8. TEST PROCEDURE(S)

Test was carried out under the following conditions.

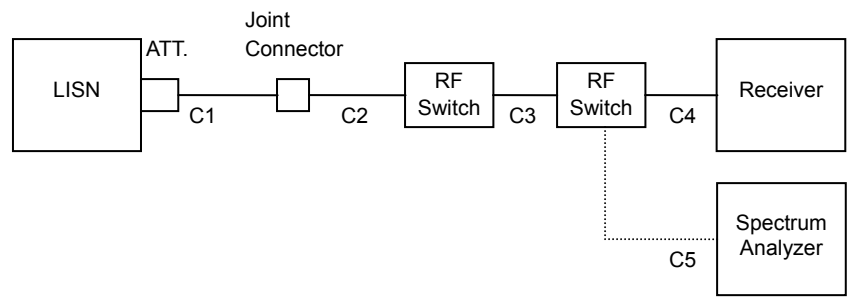
Conducted disturbance at mains terminals

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

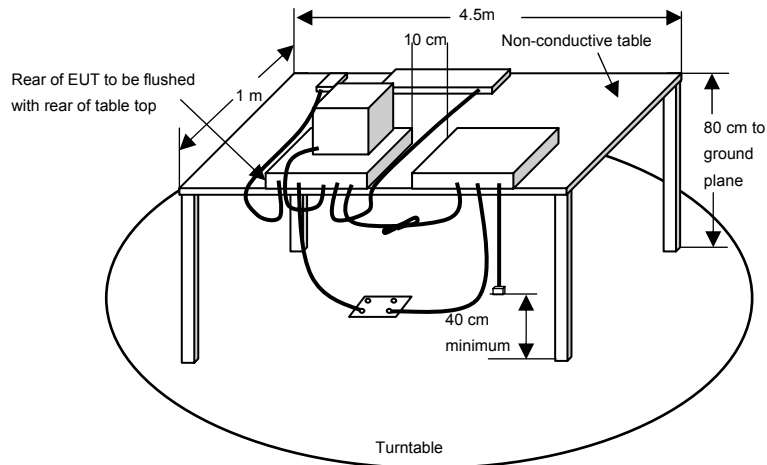
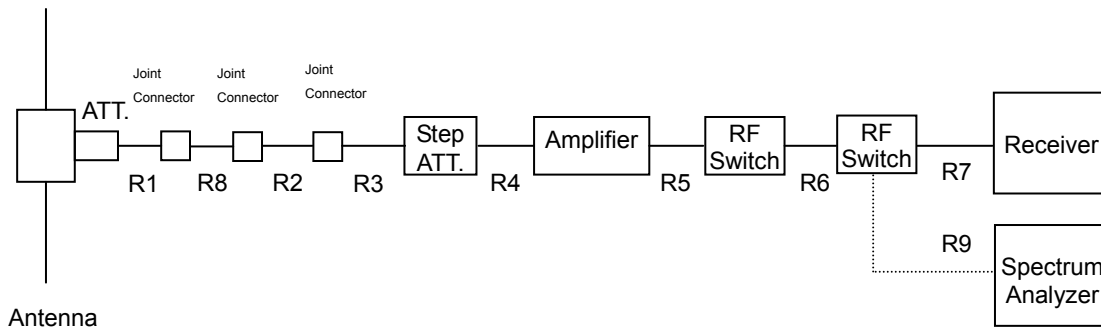
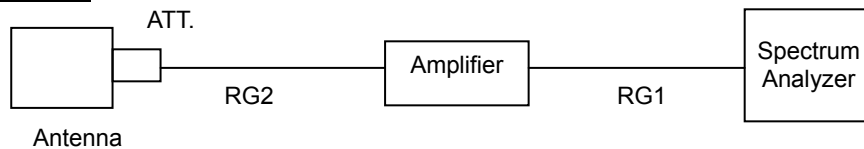


Diagram of the measuring instruments (30-1000MHz)



Above 1GHz



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. Then spectrum chart is plotted out to find the worst emission conditions in configuration, operating mode, or ambient noise notation.

[Final Measurement]

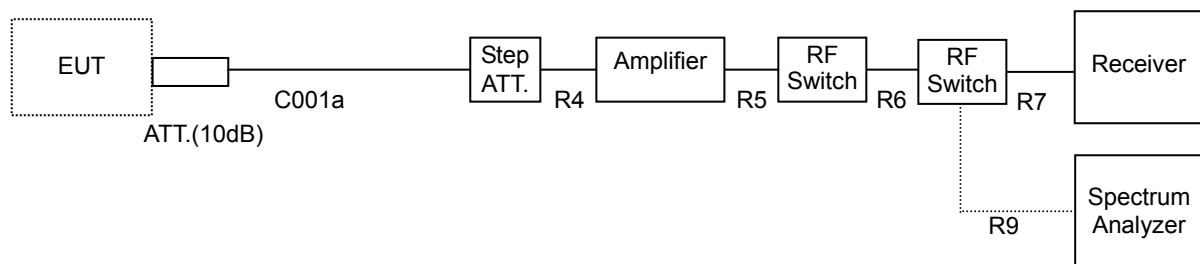
The EUT operated in the worst emission condition found by the preliminary test.

The turntable azimuth (EUT direction) and antenna height (1 to 4 meters) are adjusted the position so that maximum field strength is obtained for each frequency spectrum to be measured.

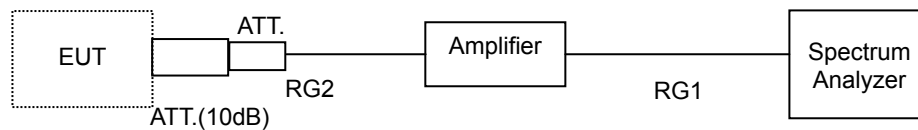
The equipment and cables are arranged or manipulated within the range of the test standard in the above condition. At least six highest spectrum are measured by the test receiver (quasi-peak) and spectrum analyzer (peak and average). When the uncertain result was obtained, the measurement is retried by using the half wave dipole antenna instead of the broadband antenna.

Conducted Power on Antenna port (15.111)

Schema for the conducted power on antenna port measurement



Above 1GHz



[Instrument Setup]

Frequency [MHz]	Instrument	Detector Function	Resolution Bandwidth	Video Bandwidth
30 to 1000	Receiver	Quasi Peak	120 kHz	N.A.
Above 1000	Spectrum Analyzer	Peak	1 MHz	1 MHz

[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 are plotted out to find the worst emission conditions in operating mode and/or configuration decision for the final test.

[Final Measurement]

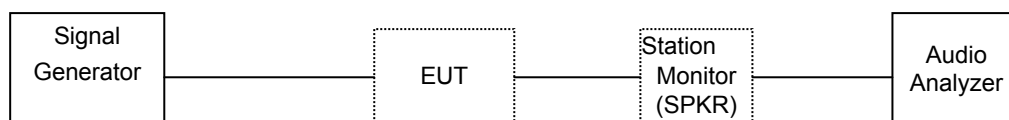
The EUT is operated in the worst emission condition found by the preliminary test.

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 by the test receiver (quasi-peak) and spectrum analyzer (peak).

38dB Rejection

Schema for the 38dB rejection measurement



[Preliminary Measurement]

The Signal Generator conditions :

Output level = 66 dBuV.

Modulation = Frequency modulated to 1 kHz tone at 3 kHz peak deviation.

Frequency Points = 824.040 MHz, 836.505 MHz, 848.970 MHz
869.040 MHz, 881.505 MHz, 893.970 MHz

(The Cellular Radiotelephone Service mobile and base frequency bands)

The EUT condition :

Scanning Frequency = 0.030 MHz – 60.000 MHz (5 kHz Step).

Scan stopped point, was the detected frequency.

[Final Measurement]

Injected 12dB SINAD Reading (SG RF Output)

The EUT condition :

Frequency = Scan stopped point

The Signal Generator condition :

Frequency = Cellular point

Detected 12dB SINAD Reading (SG RF Output)

The EUT condition :

Frequency = Scan stopped point

The Signal Generator condition :

Frequency = Scan stopped point

Under the requirements of Section 15.121(b) of the Rule.

Injected 12dB SINAD Reading – Detected 12dB SINAD Reading = 38 dB or more.

SECTION 9. MEASUREMENT UNCERTAINTY

Radiated disturbance at 3m	U_{lab}	U_{cisp}
30 MHz – 1000 MHz Above 1 GHz (ANSI)	+/- 3.6 dB +/- 4.2 dB	5.2 dB
Radiated disturbance at 10m		
30 MHz – 1000 MHz Above 1 GHz (ANSI)	+/- 3.7 dB +/- 4.2 dB	5.1 dB
Radiated disturbance at 30m		
	N/A	5.2 dB
Conducted disturbance at mains terminals		
9 kHz - 150 kHz 150 kHz - 30 MHz	+/- 2.7 dB	4.0 dB 3.6 dB
Conducted disturbance at telecommunication ports (voltage)		
9 kHz – 30 MHz	+/- 2.7 dB	Nil
Conducted disturbance at telecommunication ports (current)		
9 kHz – 30 MHz	+/- 2.8 dB	Nil
Conducted disturbance at terminals		
150 kHz – 30 MHz	+/- 2.7 dB	Nil
Disturbance power		
30 MHz – 300 MHz	+/- 2.9 dB	4.5 dB
Conducted Power on Antenna Port (15.111)		
30 MHz – 1000 MHz Above 1 GHz	+/- 2.8 dB +/- 1.6 dB	Nil
38dB Rejection (15.121(b))		
30 kHz – 60 MHz	+/- 0.56 dB	Nil

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

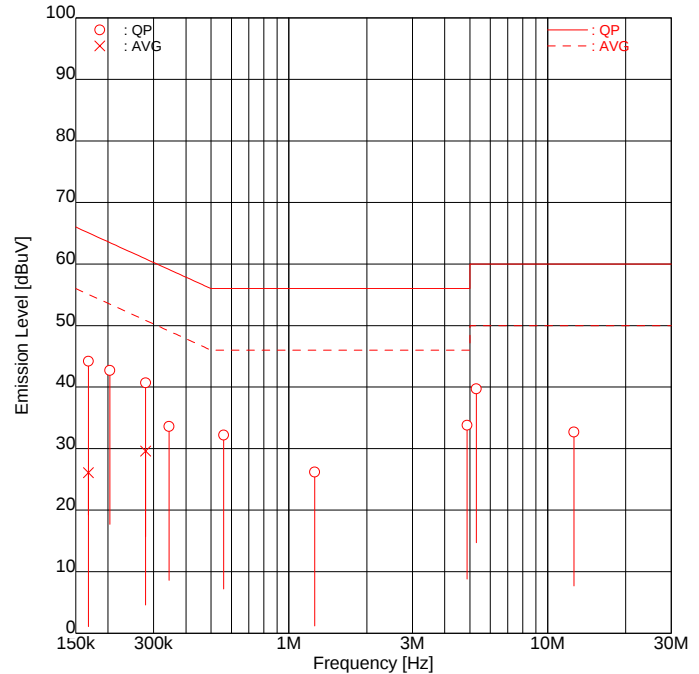
10.1.1 Rx A:B:0.030MHz (ANT 1) (Power Line for FT DX 5000MP)

Intertek Japan K.K.

Tochigi No.2 Test Site

Conducted Voltages on Mains Port

APPLICANT : Vertex Standard Co., Ltd.
EUT NAME : HF Transceiver
MODEL NO. : FT DX 5000MP
SERIAL NO. : 9N000005
TEST MODE : Rx A:B:0.030MHz (ANT 1)
POWER SOURCE : AC120V, 60Hz
DATE TESTED : Dec 25 2009
FILE NO. : JT09120024
REGULATION : FCC Part15B Class B
TEST METHOD : ANSI C63.4-2003
TEMPERATURE : 22.0 [degC]
HUMIDITY : 45.0 [%]
NOTE : Power Line for FT DX 5000MP



ENGINEER : Atsuyuki Morishima

FREQUENCY [No]	MODE	FREQ [MHz]	READING [dBuV]		FACTOR [dB]		EMISSION [dBuV]		LIMIT [dBuV]	MARGIN [dB]	
			Line1	Line2	Line1	Line2	Line1	Line2		Line1	Line2
1	QP	0.1679	<u>33.8</u>	33.8	10.4	10.4	<u>44.2</u>	44.2	65.1	<u>20.9</u>	20.9
2	AVG	0.1679	15.7	15.5	10.4	10.4	26.1	25.9	55.1	29.0	29.2
3	QP	0.2030	32.1	<u>32.3</u>	10.4	10.4	42.5	<u>42.7</u>	63.5	21.0	<u>20.8</u>
4	QP	0.2795	25.2	<u>30.3</u>	10.4	10.4	35.6	<u>40.7</u>	60.8	25.2	<u>20.1</u>
5	AVG	0.2795	18.7	<u>19.2</u>	10.4	10.4	29.1	<u>29.6</u>	50.8	21.7	<u>21.2</u>
6	QP	0.3443	22.2	23.2	10.4	10.4	32.6	33.6	59.1	26.5	25.5
7	QP	0.5598	20.0	21.8	10.4	10.4	30.4	32.2	56.0	25.6	23.8
8	QP	1.2580	15.8	13.6	10.4	10.4	26.2	24.0	56.0	29.8	32.0
9	QP	4.8789	22.1	<u>23.1</u>	10.7	10.7	32.8	<u>33.8</u>	56.0	23.2	<u>22.2</u>
10	QP	5.2960	27.5	<u>29.0</u>	10.7	10.7	38.2	<u>39.7</u>	60.0	21.8	<u>20.3</u>
11	QP	12.6280	21.7	20.0	11.0	11.1	32.7	31.1	60.0	27.3	28.9

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

emiT 3, 0, 0, 0

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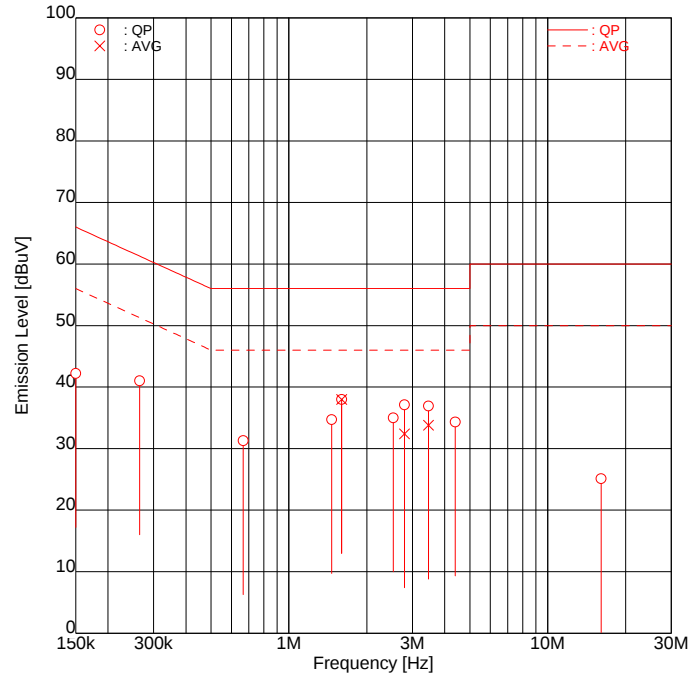
10.1.2 Rx A:B:0.030MHz (ANT 1) (Power Line for DMU-2000)

Intertek Japan K.K.

Tochigi No.2 Test Site

Conducted Voltages on Mains Port

APPLICANT : Vertex Standard Co., Ltd.
EUT NAME : HF Transceiver
MODEL NO. : FT DX 5000MP
SERIAL NO. : 9N000005
TEST MODE : Rx A:B:0.030MHz (ANT 1)
POWER SOURCE : AC120V, 60Hz
DATE TESTED : Dec 25 2009
FILE NO. : JT09120024
REGULATION : FCC Part15B Class B
TEST METHOD : ANSI C63.4-2003
TEMPERATURE : 26.0 [degC]
HUMIDITY : 45.0 [%]
NOTE : Power Line for DMU-2000



ENGINEER : Atsuyuki Morishima

[No]	FREQUENCY [MHz]	MODE	READING [dBuV]		FACTOR [dB]		EMISSION [dBuV]		LIMIT [dBuV]	MARGIN [dB]	
			Line1	Line2	Line1	Line2	Line1	Line2		Line1	Line2
1	0.1500	QP	31.3	31.8	10.4	10.4	41.7	42.2	66.0	24.3	23.8
2	0.2650	QP	29.7	30.6	10.4	10.4	40.1	41.0	61.3	21.2	20.3
3	0.6659	QP	20.9	16.2	10.4	10.4	31.3	26.6	56.0	24.7	29.4
4	1.4635	QP	24.3	20.1	10.4	10.4	34.7	30.5	56.0	21.3	25.5
5	1.5971	QP	<u>27.6</u>	21.0	10.4	10.4	<u>38.0</u>	31.4	56.0	<u>18.0</u>	24.6
6	1.5971	AVG	<u>27.6</u>	20.4	10.4	10.4	<u>38.0</u>	30.8	46.0	<u>8.0</u>	15.2
7	2.5286	QP	24.5	22.2	10.5	10.5	35.0	32.7	56.0	21.0	23.3
8	2.7939	QP	<u>26.6</u>	24.7	10.5	10.5	<u>37.1</u>	35.2	56.0	<u>18.9</u>	20.8
9	2.7939	AVG	<u>21.9</u>	15.6	10.5	10.5	<u>32.4</u>	26.1	46.0	<u>13.6</u>	19.9
10	3.4595	QP	<u>26.2</u>	23.1	10.7	10.7	<u>36.9</u>	33.8	56.0	<u>19.1</u>	22.2
11	3.4595	AVG	<u>23.1</u>	18.8	10.7	10.7	<u>33.8</u>	29.5	46.0	<u>12.2</u>	16.5
12	4.3907	QP	15.9	23.6	10.7	10.7	26.6	34.3	56.0	29.4	21.7
13	16.0670	QP	13.9	13.5	11.2	11.3	25.1	24.8	60.0	34.9	35.2

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

emiT 3, 0, 0, 0

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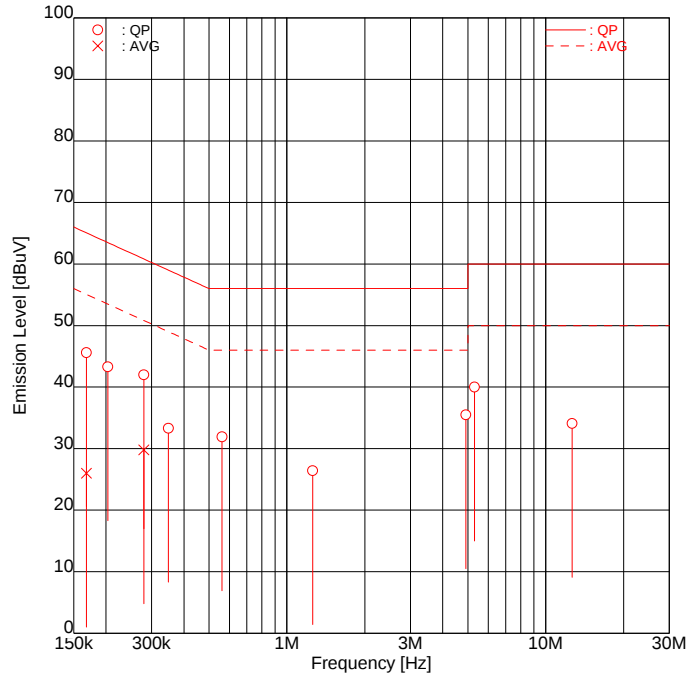
10.1.3 Rx A:B:30.000MHz (ANT 1) (Power Line for FT DX 5000MP)

Intertek Japan K.K.

Tochigi No.2 Test Site

Conducted Voltages on Mains Port

APPLICANT : Vertex Standard Co., Ltd.
EUT NAME : HF Transceiver
MODEL NO. : FT DX 5000MP
SERIAL NO. : 9N000005
TEST MODE : Rx A:B:30.000MHz (ANT 1)
POWER SOURCE : AC120V, 60Hz
DATE TESTED : Dec 25 2009
FILE NO. : JT09120024
REGULATION : FCC Part15B Class B
TEST METHOD : ANSI C63.4-2003
TEMPERATURE : 22.0 [degC]
HUMIDITY : 45.0 [%]
NOTE : Power Line for FT DX 5000MP



ENGINEER : Atsuyuki Morishima

FREQUENCY [No]	MODE [MHz]		READING [dBuV]		FACTOR [dB]		EMISSION [dBuV]		LIMIT [dBuV]	MARGIN [dB]	
			Line1	Line2	Line1	Line2	Line1	Line2		Line1	Line2
1	0.1680	QP	<u>35.2</u>	35.2	10.4	10.4	<u>45.6</u>	45.6	65.1	<u>19.5</u>	19.5
2	0.1680	AVG	15.5	15.6	10.4	10.4	25.9	26.0	55.1	29.2	29.1
3	0.2033	QP	32.7	<u>32.9</u>	10.4	10.4	43.1	<u>43.3</u>	63.5	20.4	<u>20.2</u>
4	0.2797	QP	26.6	<u>31.6</u>	10.4	10.4	37.0	<u>42.0</u>	60.8	23.8	<u>18.8</u>
5	0.2797	AVG	18.8	<u>19.4</u>	10.4	10.4	29.2	<u>29.8</u>	50.8	21.6	<u>21.0</u>
6	0.3485	QP	21.6	22.9	10.4	10.4	32.0	33.3	59.0	27.0	25.7
7	0.5615	QP	17.8	21.5	10.4	10.4	28.2	31.9	56.0	27.8	24.1
8	1.2573	QP	16.0	13.9	10.4	10.4	26.4	24.3	56.0	29.6	31.7
9	4.9120	QP	23.1	<u>24.8</u>	10.7	10.7	33.8	<u>35.5</u>	56.0	22.2	<u>20.5</u>
10	5.3060	QP	27.6	<u>29.3</u>	10.7	10.7	38.3	<u>40.0</u>	60.0	21.7	<u>20.0</u>
11	12.6520	QP	23.1	21.5	11.0	11.1	34.1	32.6	60.0	25.9	27.4

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

emiT 3, 0, 0, 0

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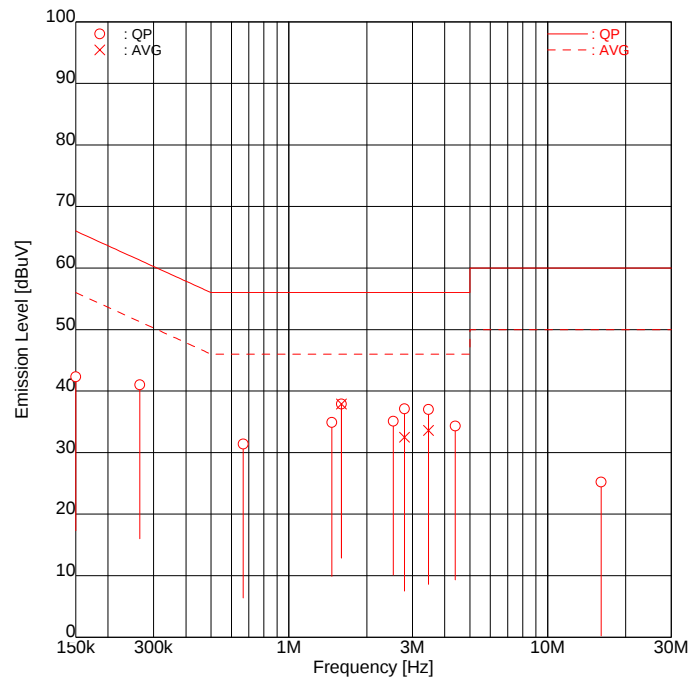
10.1.4 Rx A:B:30.000MHz (ANT 1) (Power Line for DMU-2000)

Intertek Japan K.K.

Tochigi No.2 Test Site

Conducted Voltages on Mains Port

APPLICANT : Vertex Standard Co., Ltd.
EUT NAME : HF Transceiver
MODEL NO. : FT DX 5000MP
SERIAL NO. : 9N000005
TEST MODE : Rx A:B:30.000MHz (ANT 1)
POWER SOURCE : AC120V, 60Hz
DATE TESTED : Dec 25 2009
FILE NO. : JT09120024
REGULATION : FCC Part15B Class B
TEST METHOD : ANSI C63.4-2003
TEMPERATURE : 26.0 [degC]
HUMIDITY : 45.0 [%]
NOTE : Power Line for DMU-2000



ENGINEER : Atsuyuki Morishima

[No]	FREQUENCY [MHz]	MODE	READING [dBuV]		FACTOR [dB]		EMISSION [dBuV]		LIMIT [dBuV]	MARGIN [dB]	
			Line1	Line2	Line1	Line2	Line1	Line2		Line1	Line2
1	0.1500	QP	31.8	31.9	10.4	10.4	42.2	42.3	66.0	23.8	23.7
2	0.2654	QP	29.5	30.6	10.4	10.4	39.9	41.0	61.3	21.4	20.3
3	0.6659	QP	21.0	16.1	10.4	10.4	31.4	26.5	56.0	24.6	29.5
4	1.4645	QP	24.5	20.2	10.4	10.4	34.9	30.6	56.0	21.1	25.4
5	1.5968	QP	<u>27.5</u>	20.9	10.4	10.4	<u>37.9</u>	31.3	56.0	<u>18.1</u>	24.7
6	1.5968	AVG	<u>27.5</u>	20.2	10.4	10.4	<u>37.9</u>	30.6	46.0	<u>8.1</u>	15.4
7	2.5285	QP	24.6	22.3	10.5	10.5	35.1	32.8	56.0	20.9	23.2
8	2.7945	QP	<u>26.6</u>	24.6	10.5	10.5	<u>37.1</u>	35.1	56.0	<u>18.9</u>	20.9
9	2.7945	AVG	<u>22.0</u>	15.8	10.5	10.5	<u>32.5</u>	26.3	46.0	<u>13.5</u>	19.7
10	3.4595	QP	<u>26.3</u>	23.1	10.7	10.7	<u>37.0</u>	33.8	56.0	<u>19.0</u>	22.2
11	3.4595	AVG	<u>22.9</u>	18.8	10.7	10.7	<u>33.6</u>	29.5	46.0	<u>12.4</u>	16.5
12	4.3910	QP	16.3	23.6	10.7	10.7	27.0	34.3	56.0	29.0	21.7
13	16.0670	QP	14.0	13.6	11.2	11.3	25.2	24.9	60.0	34.8	35.1

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

emiT 3, 0, 0, 0

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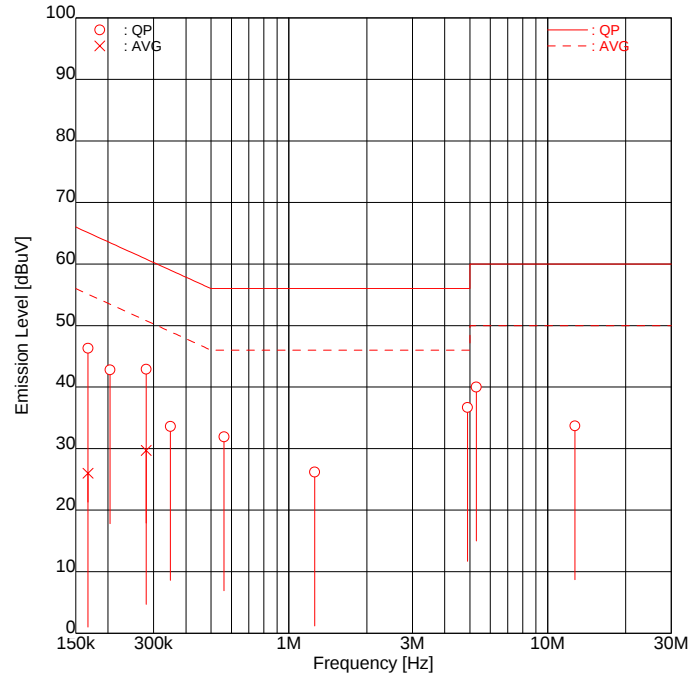
10.1.5 Rx A:B:60.000MHz (ANT 1) (Power Line for FT DX 5000MP)

Intertek Japan K.K.

Tochigi No.2 Test Site

Conducted Voltages on Mains Port

APPLICANT : Vertex Standard Co., Ltd.
EUT NAME : HF Transceiver
MODEL NO. : FT DX 5000MP
SERIAL NO. : 9N000005
TEST MODE : Rx A:B:60.000MHz (ANT 1)
POWER SOURCE : AC120V, 60Hz
DATE TESTED : Dec 25 2009
FILE NO. : JT09120024
REGULATION : FCC Part15B Class B
TEST METHOD : ANSI C63.4-2003
TEMPERATURE : 22.0 [degC]
HUMIDITY : 45.0 [%]
NOTE : Power Line for FT DX 5000MP



ENGINEER : Atsuyuki Morishima

FREQUENCY [No]	MODE	READING [dBuV]		FACTOR [dB]		EMISSION [dBuV]		LIMIT [dBuV]	MARGIN [dB]	
		Line1	Line2	Line1	Line2	Line1	Line2		Line1	Line2
1	0.1674 QP	35.8	<u>35.9</u>	10.4	10.4	46.2	<u>46.3</u>	65.1	18.9	<u>18.8</u>
2	0.1674 AVG	15.6	15.5	10.4	10.4	26.0	25.9	55.1	29.1	29.2
3	0.2035 QP	<u>32.4</u>	32.4	10.4	10.4	<u>42.8</u>	42.8	63.5	<u>20.7</u>	20.7
4	0.2809 QP	27.8	<u>32.5</u>	10.4	10.4	38.2	<u>42.9</u>	60.8	22.6	<u>17.9</u>
5	0.2809 AVG	18.8	<u>19.3</u>	10.4	10.4	29.2	<u>29.7</u>	50.8	21.6	<u>21.1</u>
6	0.3485 QP	22.1	23.2	10.4	10.4	32.5	33.6	59.0	26.5	25.4
7	0.5615 QP	17.9	21.5	10.4	10.4	28.3	31.9	56.0	27.7	24.1
8	1.2570 QP	15.8	13.6	10.4	10.4	26.2	24.0	56.0	29.8	32.0
9	4.8973 QP	24.3	<u>26.0</u>	10.7	10.7	35.0	<u>36.7</u>	56.0	21.0	<u>19.3</u>
10	5.2915 QP	27.9	<u>29.3</u>	10.7	10.7	38.6	<u>40.0</u>	60.0	21.4	<u>20.0</u>
11	12.7292 QP	22.7	21.0	11.0	11.1	33.7	32.1	60.0	26.3	27.9

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

emiT 3, 0, 0, 0

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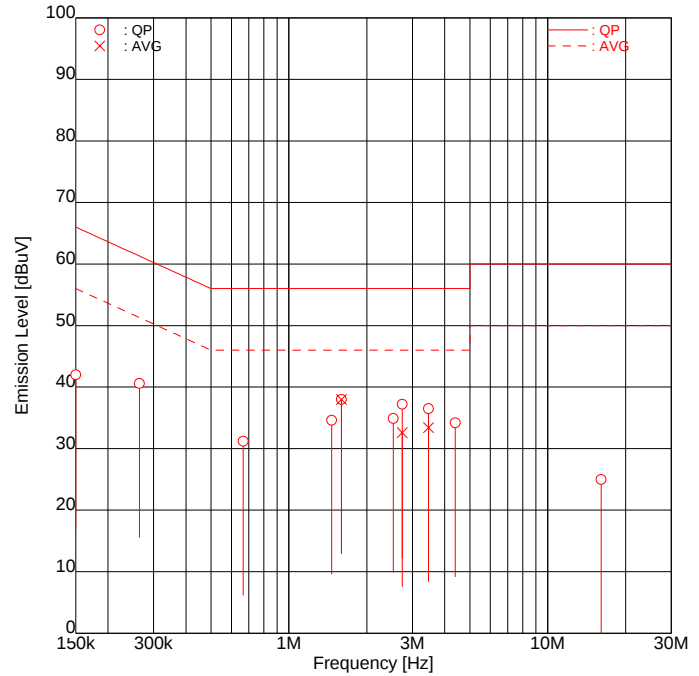
10.1.6 Rx A:B:60.000MHz (ANT 1) (Power Line for DMU-2000)

Intertek Japan K.K.

Tochigi No.2 Test Site

Conducted Voltages on Mains Port

APPLICANT : Vertex Standard Co., Ltd.
EUT NAME : HF Transceiver
MODEL NO. : FT DX 5000MP
SERIAL NO. : 9N000005
TEST MODE : Rx A:B:60.000MHz (ANT 1)
POWER SOURCE : AC120V, 60Hz
DATE TESTED : Dec 25 2009
FILE NO. : JT09120024
REGULATION : FCC Part15B Class B
TEST METHOD : ANSI C63.4-2003
TEMPERATURE : 23.0 [degC]
HUMIDITY : 46.0 [%]
NOTE : Power Line for DMU-2000



ENGINEER : Atsuyuki Morishima

[No]	FREQUENCY [MHz]	MODE	READING [dBuV]		FACTOR [dB]		EMISSION [dBuV]		LIMIT [dBuV]	MARGIN [dB]	
			Line1	Line2	Line1	Line2	Line1	Line2		Line1	Line2
1	0.1500	QP	31.2	31.6	10.4	10.4	41.6	42.0	66.0	24.4	24.0
2	0.2642	QP	29.1	30.2	10.4	10.4	39.5	40.6	61.3	21.8	20.7
3	0.6658	QP	20.8	16.0	10.4	10.4	31.2	26.4	56.0	24.8	29.6
4	1.4627	QP	24.2	20.0	10.4	10.4	34.6	30.4	56.0	21.4	25.6
5	1.5968	QP	<u>27.6</u>	21.0	10.4	10.4	<u>38.0</u>	31.4	56.0	<u>18.0</u>	24.6
6	1.5968	AVG	<u>27.6</u>	20.3	10.4	10.4	<u>38.0</u>	30.7	46.0	<u>8.0</u>	15.3
7	2.5280	QP	24.4	21.8	10.5	10.5	34.9	32.3	56.0	21.1	23.7
8	2.7423	QP	<u>26.7</u>	25.2	10.5	10.5	<u>37.2</u>	35.7	56.0	<u>18.8</u>	20.3
9	2.7423	AVG	<u>22.1</u>	16.0	10.5	10.5	<u>32.6</u>	26.5	46.0	<u>13.4</u>	19.5
10	3.4598	QP	<u>25.8</u>	22.9	10.7	10.7	<u>36.5</u>	33.6	56.0	<u>19.5</u>	22.4
11	3.4598	AVG	<u>22.7</u>	18.7	10.7	10.7	<u>33.4</u>	29.4	46.0	<u>12.6</u>	16.6
12	4.3910	QP	15.0	23.5	10.7	10.7	25.7	34.2	56.0	30.3	21.8
13	16.0674	QP	13.8	13.2	11.2	11.3	25.0	24.5	60.0	35.0	35.5

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

emiT 3, 0, 0, 0

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10.2 Radiated disturbance

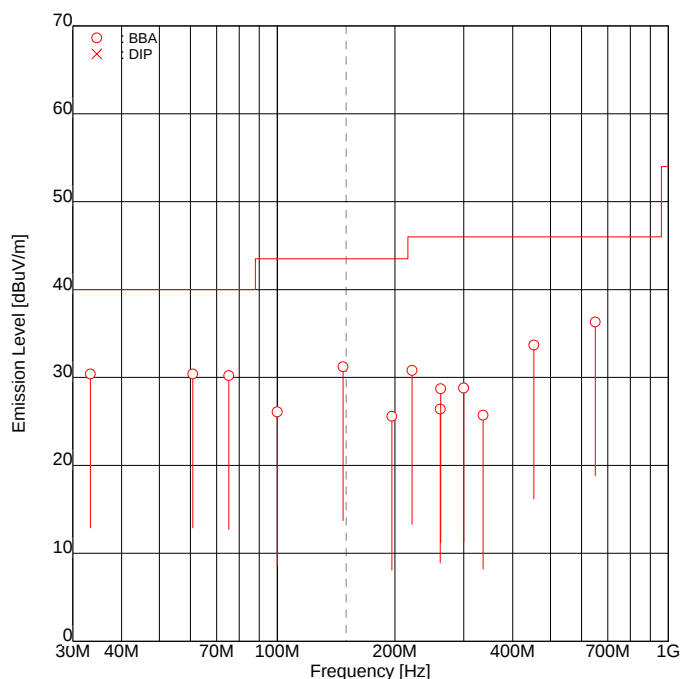
10.2.1 Rx A:B:0.030MHz (ANT 1) [30 – 1000MHz]

Intertek Japan K.K.

Tochigi No.2 Test Site

Radiated Electric Field

APPLICANT : Vertex Standard Co., Ltd.
EUT NAME : HF Transceiver
MODEL NO. : FT DX 5000MP
SERIAL NO. : 9N000005
TEST MODE : Rx A:B:0.030MHz (ANT 1)
POWER SOURCE : AC120V, 60Hz
DATE TESTED : Dec 24 2009
FILE NO. : JT09120024
REGULATION : FCC Part15B Class B
TEST METHOD : ANSI C63.4-2003
DISTANCE : 3.00 [m]
TEMPERATURE : 21.0 [degC]
HUMIDITY : 35.0 [%]
NOTE :



ENGINEER : Atsuyuki Morishima

[No]	FREQUENCY [MHz]	ANT.	READING [dBuV]		FACTOR [dB/m]		EMISSION [dBuV/m]		LIMIT [dBuV/m]	MARGIN [dB]	
			Hori	Vert	Hori	Vert	Hori	Vert		Hori	Vert
1	33.30	BBA	-	<u>37.1</u>	-6.7	-6.7	-	<u>30.4</u>	40.0	-	<u>9.6</u>
2	60.85	BBA	-	<u>35.1</u>	-4.7	-4.7	-	<u>30.4</u>	40.0	-	<u>9.6</u>
3	75.22	BBA	<u>37.4</u>	-	-7.2	-7.2	<u>30.2</u>	-	40.0	9.8	-
4	100.00	BBA	<u>35.0</u>	-	-8.9	-8.9	<u>26.1</u>	-	43.5	17.4	-
5	147.46	BBA	<u>34.9</u>	34.6	-3.7	-3.7	<u>31.2</u>	30.9	43.5	<u>12.3</u>	12.6
6	196.42	BBA	-	31.3	-5.7	-5.7	-	25.6	43.5	-	17.9
7	221.19	BBA	35.5	33.7	-4.7	-4.7	30.8	29.0	46.0	15.2	17.0
8	261.39	BBA	-	29.1	-2.7	-2.7	-	26.4	46.0	-	19.6
9	261.89	BBA	31.4	27.4	-2.7	-2.7	28.7	24.7	46.0	17.3	21.3
10	299.95	BBA	29.9	-	-1.1	-1.1	28.8	-	46.0	17.2	-
11	336.05	BBA	-	25.7	0.0	0.0	-	25.7	46.0	-	20.3
12	453.54	BBA	-	<u>30.7</u>	3.0	3.0	-	<u>33.7</u>	46.0	-	<u>12.3</u>
13	651.29	BBA	<u>29.1</u>	-	7.2	7.2	<u>36.3</u>	-	46.0	<u>9.7</u>	-

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

emiT 3, 0, 0, 0

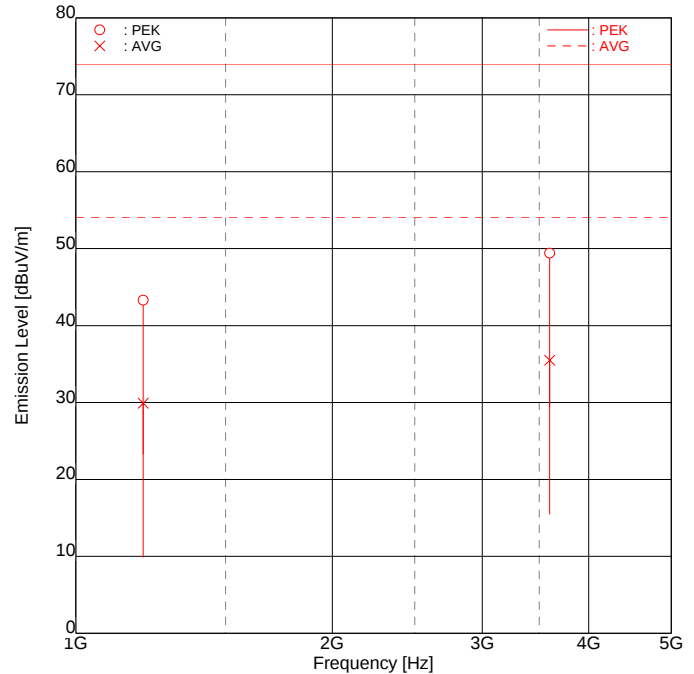
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10.2.2 Rx A:B:0.030MHz (ANT 1) [1000 – 5000MHz]

Intertek Japan K.K.
Tochigi No.2 Test Site
Radiated Electric Field

APPLICANT : Vertex Standard Co., Ltd.
EUT NAME : HF Transceiver
MODEL NO. : FT DX 5000MP
SERIAL NO. : 9N000005
TEST MODE : Rx A:B:0.030MHz (ANT 1)
POWER SOURCE : AC120V, 60Hz
DATE TESTED : Dec 25 2009
FILE NO. : JT09120024
REGULATION : FCC Part15B Class B
TEST METHOD : ANSI C63.4-2003
DISTANCE : 3.00 [m]
TEMPERATURE : 22.9 [degC]
HUMIDITY : 45.0 [%]
NOTE :

ENGINEER : Atsuyuki Morishima



[No]	FREQUENCY [MHz]	MODE	READING [dBuV]		FACTOR [dB]		EMISSION [dBuV/m]		LIMIT [dBuV/m]	MARGIN [dB]	
			Hori	Vert	Hori	Vert	Hori	Vert		Hori	Vert
1	1199.87	PEK	45.9	46.1	-2.8	-2.8	43.1	43.3	74.0	30.9	30.7
2	1199.87	AVG	32.5	32.7	-2.8	-2.8	29.7	29.9	54.0	24.3	24.1
3	3600.00	PEK	43.0	42.2	6.4	6.4	49.4	48.6	74.0	24.6	25.4
4	3600.00	AVG	24.5	29.1	6.4	6.4	30.9	35.5	54.0	23.1	18.5

Higher six points are underlined.

Other frequencies : Below the FCC Part15B Class B limit

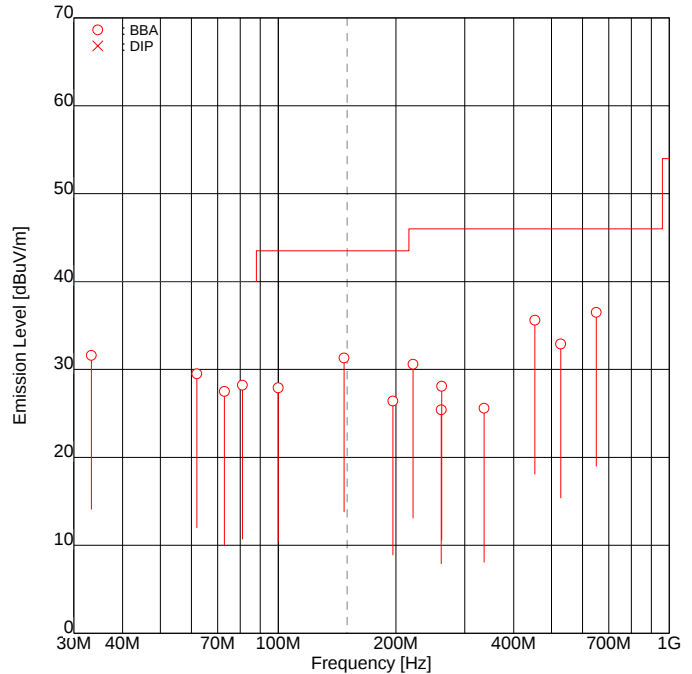
Emission Level = Read + Factor(Antenna, Antenna Pad, Cable, Preamp)

ANT. : Used antenna(BBA = Broadband antenna, DIP = Dipole antenna)

10.2.3 Rx A:B:30.000MHz (ANT 1) [30 – 1000MHz]

Intertek Japan K.K.
Tochigi No.2 Test Site
Radiated Electric Field

APPLICANT : Vertex Standard Co., Ltd.
EUT NAME : HF Transceiver
MODEL NO. : FT DX 5000MP
SERIAL NO. : 9N000005
TEST MODE : Rx A:B:30.000MHz (ANT 1)
POWER SOURCE : AC120V, 60Hz
DATE TESTED : Dec 24 2009
FILE NO. : JT09120024
REGULATION : FCC Part15B Class B
TEST METHOD : ANSI C63.4-2003
DISTANCE : 3.00 [m]
TEMPERATURE : 20.0 [degC]
HUMIDITY : 32.0 [%]
NOTE :



ENGINEER : Atsuyuki Morishima

FREQUENCY [No]	FREQ [MHz]	ANT.	READING [dBuV]		FACTOR [dB/m]		EMISSION [dBuV/m]		LIMIT [dBuV/m]	MARGIN [dB]	
			Hori	Vert	Hori	Vert	Hori	Vert		Hori	Vert
1	33.30	BBA	-	<u>38.3</u>	-6.7	-6.7	-	<u>31.6</u>	40.0	-	<u>8.4</u>
2	61.94	BBA	-	<u>34.4</u>	-4.9	-4.9	-	<u>29.5</u>	40.0	-	<u>10.5</u>
3	72.90	BBA	32.7	34.2	-6.7	-6.7	26.0	27.5	40.0	14.0	12.5
4	81.02	BBA	35.1	<u>36.6</u>	-8.4	-8.4	26.7	<u>28.2</u>	40.0	13.3	<u>11.8</u>
5	100.00	BBA	36.8	34.5	-8.9	-8.9	27.9	25.6	43.5	15.6	17.9
6	147.46	BBA	<u>35.0</u>	34.1	-3.7	-3.7	<u>31.3</u>	30.4	43.5	<u>12.2</u>	13.1
7	196.42	BBA	31.2	32.1	-5.7	-5.7	25.5	26.4	43.5	18.0	17.1
8	221.19	BBA	35.3	31.9	-4.7	-4.7	30.6	27.2	46.0	15.4	18.8
9	261.39	BBA	-	28.1	-2.7	-2.7	-	25.4	46.0	-	20.6
10	261.89	BBA	30.8	24.8	-2.7	-2.7	28.1	22.1	46.0	17.9	23.9
11	336.05	BBA	-	25.6	0.0	0.0	-	25.6	46.0	-	20.4
12	453.54	BBA	-	<u>32.6</u>	3.0	3.0	-	<u>35.6</u>	46.0	-	<u>10.4</u>
13	528.07	BBA	27.9	-	5.0	5.0	32.9	-	46.0	13.1	-
14	651.29	BBA	<u>29.3</u>	-	7.2	7.2	<u>36.5</u>	-	46.0	<u>9.5</u>	-

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

emiT 3, 0, 0, 0

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10.2.4 Rx A:B:30.000MHz (ANT 1) [1000 – 5000MHz]

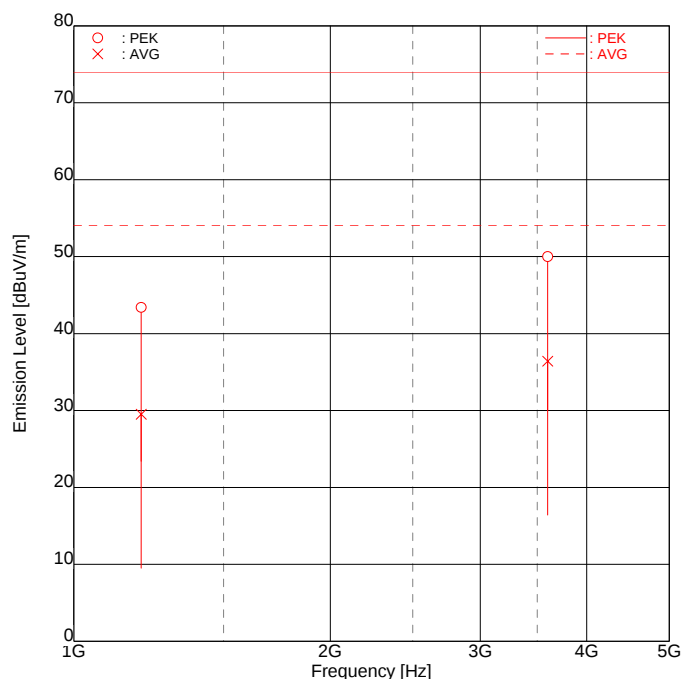
Intertek Japan K.K.

Tochigi No.2 Test Site

Radiated Electric Field

APPLICANT : Vertex Standard Co., Ltd.
EUT NAME : HF Transceiver
MODEL NO. : FT DX 5000MP
SERIAL NO. : 9N000005
TEST MODE : Rx A:B:30.000MHz (ANT 1)
POWER SOURCE : AC120V, 60Hz
DATE TESTED : Dec 25 2009
FILE NO. : JT09120024
REGULATION : FCC Part15B Class B
TEST METHOD : ANSI C63.4-2003
DISTANCE : 3.00 [m]
TEMPERATURE : 22.9 [degC]
HUMIDITY : 45.0 [%]
NOTE :

ENGINEER : Atsuyuki Morishima



FREQUENCY [No]	MODE	READING [dBuV]	FACTOR [dB]		EMISSION [dBuV/m]		LIMIT [dBuV/m]		MARGIN [dB]		
			Hori	Vert	Hori	Vert	Hori	Vert	Hori	Vert	
1	1200.00	PEK	46.1	<u>46.2</u>	-2.8	-2.8	43.3	<u>43.4</u>	74.0	30.7	<u>30.6</u>
2	1200.00	AVG	<u>32.3</u>	31.9	-2.8	-2.8	<u>29.5</u>	29.1	54.0	<u>24.5</u>	24.9
3	3600.00	PEK	<u>43.6</u>	43.2	6.4	6.4	<u>50.0</u>	49.6	74.0	<u>24.0</u>	24.4
4	3600.00	AVG	<u>30.0</u>	29.6	6.4	6.4	<u>36.4</u>	36.0	54.0	<u>17.6</u>	18.0

Higher six points are underlined.

Other frequencies : Below the FCC Part15B Class B limit

Emission Level = Read + Factor(Antenna,Antenna Pad,Cable,Preamp)

ANT. : Used antenna(BBA = Broadband antenna, DIP = Dipole antenna)

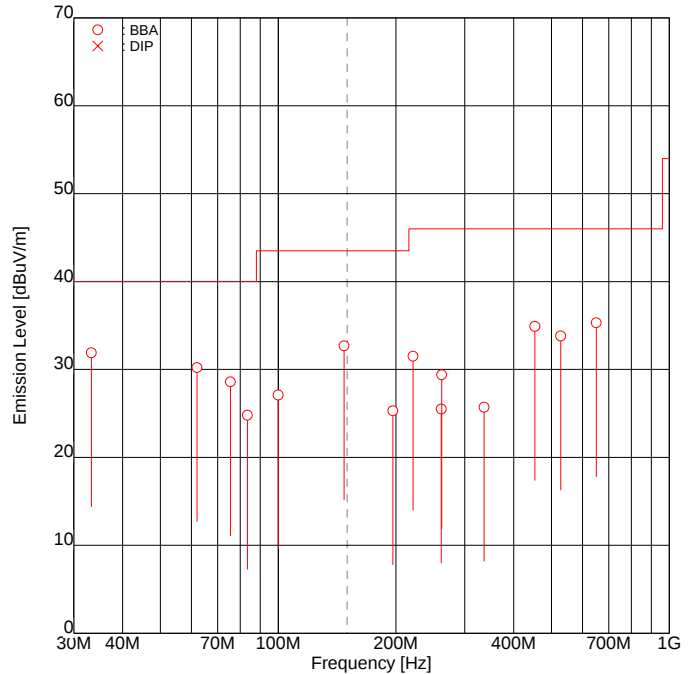
10.2.5 Rx A:B:60.000MHz (ANT 1) [30 – 1000MHz]

Intertek Japan K.K.

Tochigi No.2 Test Site

Radiated Electric Field

APPLICANT : Vertex Standard Co., Ltd.
EUT NAME : HF Transceiver
MODEL NO. : FT DX 5000MP
SERIAL NO. : 9N000005
TEST MODE : Rx A:B:60.000MHz (ANT 1)
POWER SOURCE : AC120V, 60Hz
DATE TESTED : Dec 24 2009
FILE NO. : JT09120024
REGULATION : FCC Part15B Class B
TEST METHOD : ANSI C63.4-2003
DISTANCE : 3.00 [m]
TEMPERATURE : 20.0 [degC]
HUMIDITY : 32.0 [%]
NOTE :



ENGINEER : Atsuyuki Morishima

FREQ [No]	FREQ [MHz]	ANT.	READING [dBuV]		FACTOR [dB/m]		EMISSION [dBuV/m]		LIMIT [dBuV/m]	MARGIN [dB]	
			Hori	Vert	Hori	Vert	Hori	Vert		Hori	Vert
1	33.30	BBA	-	<u>38.6</u>	-6.7	-6.7	-	<u>31.9</u>	40.0	-	<u>8.1</u>
2	61.98	BBA	-	<u>35.1</u>	-4.9	-4.9	-	<u>30.2</u>	40.0	-	<u>9.8</u>
3	75.50	BBA	<u>35.9</u>	34.0	-7.3	-7.3	<u>28.6</u>	26.7	40.0	<u>11.4</u>	13.3
4	83.42	BBA	-	33.7	-8.9	-8.9	-	24.8	40.0	-	15.2
5	100.00	BBA	36.0	35.4	-8.9	-8.9	27.1	26.5	43.5	16.4	17.0
6	147.46	BBA	34.8	<u>36.4</u>	-3.7	-3.7	31.1	<u>32.7</u>	43.5	12.4	<u>10.8</u>
7	196.42	BBA	31.0	29.9	-5.7	-5.7	25.3	24.2	43.5	18.2	19.3
8	221.19	BBA	36.2	32.6	-4.7	-4.7	31.5	27.9	46.0	14.5	18.1
9	261.39	BBA	-	28.2	-2.7	-2.7	-	25.5	46.0	-	20.5
10	261.89	BBA	32.1	25.2	-2.7	-2.7	29.4	22.5	46.0	16.6	23.5
11	336.05	BBA	-	25.7	0.0	0.0	-	25.7	46.0	-	20.3
12	453.54	BBA	-	<u>31.9</u>	3.0	3.0	-	<u>34.9</u>	46.0	-	<u>11.1</u>
13	528.07	BBA	28.8	-	5.0	5.0	33.8	-	46.0	12.2	-
14	651.29	BBA	<u>28.1</u>	-	7.2	7.2	<u>35.3</u>	-	46.0	<u>10.7</u>	-

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

emiT 3, 0, 0, 0

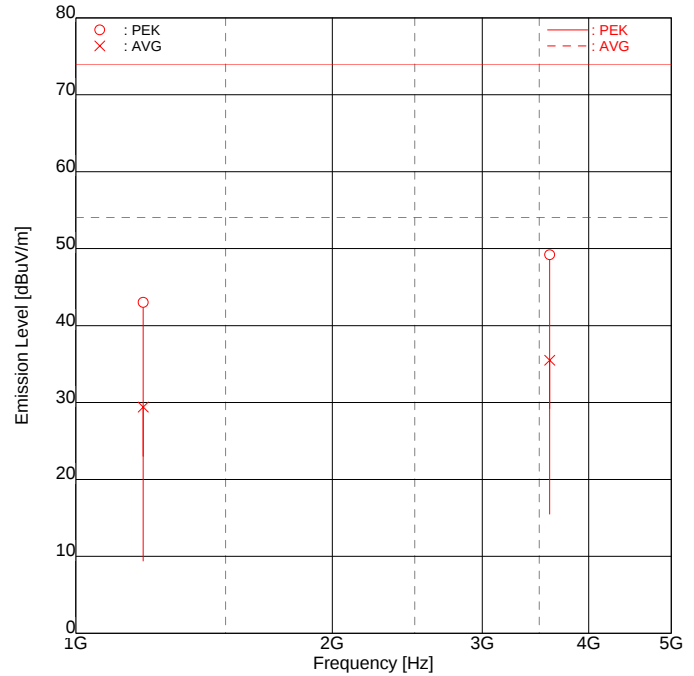
Copyright(c)2007 Intertek Japan K.K.

10.2.6 Rx A:B:60.000MHz (ANT 1) [1000 – 5000MHz]

Intertek Japan K.K.
Tochigi No.2 Test Site
Radiated Electric Field

APPLICANT : Vertex Standard Co., Ltd.
EUT NAME : HF Transceiver
MODEL NO. : FT DX 5000MP
SERIAL NO. : 9N000005
TEST MODE : Rx A:B:60.000MHz (ANT 1)
POWER SOURCE : AC120V, 60Hz
DATE TESTED : Dec 25 2009
FILE NO. : JT09120024
REGULATION : FCC Part15B Class B
TEST METHOD : ANSI C63.4-2003
DISTANCE : 3.00 [m]
TEMPERATURE : 22.9 [degC]
HUMIDITY : 45.0 [%]
NOTE :

ENGINEER : Atsuyuki Morishima



FREQUENCY [No]	MODE	READING [dBuV]	Hori		FACTOR [dB]	Hori		EMISSION [dBuV/m]	Hori		LIMIT [dBuV/m]	Hori		MARGIN [dB]	Hori	
			Vert	Vert		Vert	Vert		Vert	Vert		Vert	Vert		Vert	Vert
1	1199.98	PEK	45.7	<u>45.8</u>	-2.8	-2.8		42.9	<u>43.0</u>		74.0	31.1	<u>31.0</u>			
2	1199.98	AVG	32.1	<u>32.2</u>	-2.8	-2.8		29.3	<u>29.4</u>		54.0	24.7	<u>24.6</u>			
3	3600.00	PEK	<u>42.8</u>	42.4	6.4	6.4		<u>49.2</u>	48.8		74.0	<u>24.8</u>	25.2			
4	3600.00	AVG	<u>29.1</u>	29.0	6.4	6.4		<u>35.5</u>	35.4		54.0	<u>18.5</u>	18.6			

Higher six points are underlined.

Other frequencies : Below the FCC Part15B Class B limit

Emission Level = Read + Factor(Antenna, Antenna Pad, Cable, Preamp)

ANT. : Used antenna(BBA = Broadband antenna, DIP = Dipole antenna)

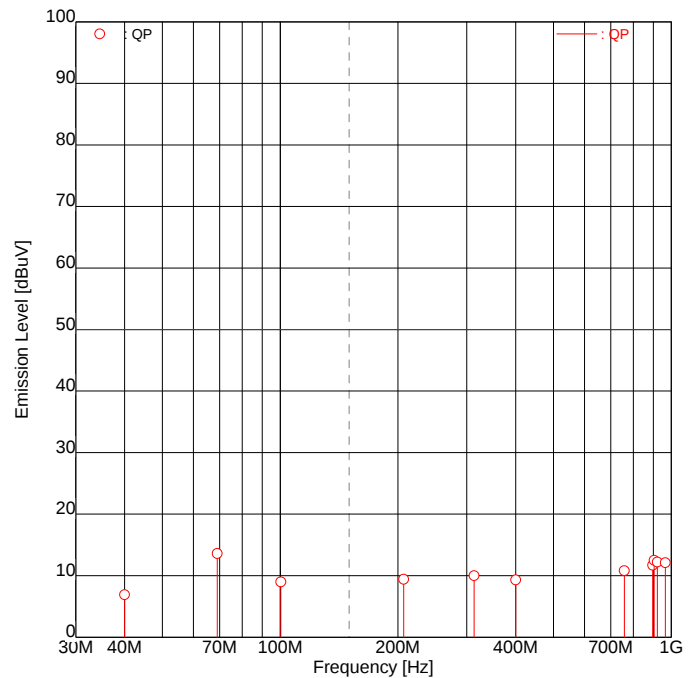
10.3 Conducted Power on Antenna Port (15.111)
10.3.1 Rx A:B:60.000MHz (ANT 1) [30 – 1000MHz]

Intertek Japan K.K.

Tochigi No.2 Test Site

Conducted Power on Antenna Port

APPLICANT : Vertex Standard Co., Ltd.
EUT NAME : HF Transceiver
MODEL NO. : FT DX 5000MP
SERIAL NO. : 9N000005
TEST MODE : Rx A:B:60.000MHz (ANT 1)
POWER SOURCE : AC120V, 60Hz
DATE TESTED : Dec 26 2009
FILE NO. : JT09120024
REGULATION : FCC Part15B (15.111)
TEST METHOD : ANSI C63.4-2003
TEMPERATURE : 20.0 [degC]
HUMIDITY : 45.0 [%]
NOTE :



ENGINEER : Atsuyuki Morishima

FREQUENCY [No]	FREQUENCY [MHz]	READING [dBuV]	FACTOR [dB]	EMISSION [dBuV]	LIMIT [dBuV]	MARGIN [dB]
1	40.0000	22.1	-15.2	6.9	50.0	43.1
2	69.0000	<u>28.3</u>	-14.7	<u>13.6</u>	50.0	<u>36.4</u>
3	100.4500	23.2	-14.2	9.0	50.0	41.0
4	206.9990	22.2	-12.8	9.4	50.0	40.6
5	313.3440	22.0	-12.0	10.0	50.0	40.0
6	400.0000	21.5	-12.2	9.3	50.0	40.7
7	759.0000	<u>22.0</u>	-11.2	<u>10.8</u>	50.0	<u>39.2</u>
8	897.0030	<u>22.0</u>	-10.3	<u>11.7</u>	50.0	<u>38.3</u>
9	904.1000	<u>22.7</u>	-10.2	<u>12.5</u>	50.0	<u>37.5</u>
10	921.6000	<u>22.4</u>	-10.2	<u>12.2</u>	50.0	<u>37.8</u>
11	966.0000	<u>22.0</u>	-9.9	<u>12.1</u>	50.0	<u>37.9</u>

Higher six points are underlined.
Other frequencies : Below the FCC Part15B (15.111) limit
Emission Level = Read + Factor(Pad,Cable,Preamp)
Limit : 2nW = 50dBuV (50ohm impedance)

emiT 3, 0, 0, 0

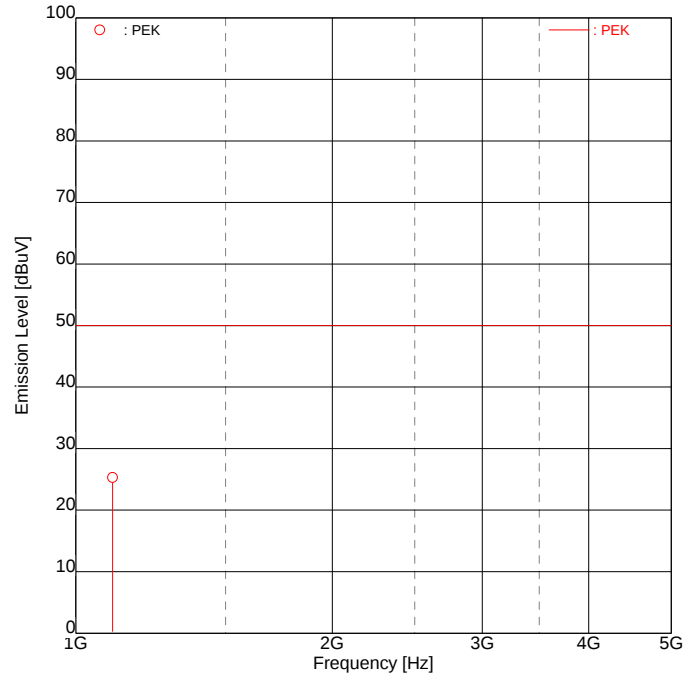
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10.3.2 Rx A:B:60.000MHz (ANT 1) [1000 – 5000MHz]

Intertek Japan K.K.
Tochigi No.2 Test Site
Conducted Power on Antenna Port

APPLICANT : Vertex Standard Co., Ltd.
EUT NAME : HF Transceiver
MODEL NO. : FT DX 5000MP
SERIAL NO. : 9N000005
TEST MODE : Rx A:B:60.000MHz (ANT 1)
POWER SOURCE : AC120V, 60Hz
DATE TESTED : Dec 28 2009
FILE NO. : JT09120024
REGULATION : FCC Part15B (15.111)
TEST METHOD : ANSI C63.4-2003
TEMPERATURE : 20.0 [degC]
HUMIDITY : 45.0 [%]
NOTE :

ENGINEER : Atsuyuki Morishima



FREQUENCY [No]	FREQUENCY [MHz]	READING [dBuV]	FACTOR [dB]	EMISSION [dBuV]	LIMIT [dBuV]	MARGIN [dB]
1	1105.0200	<u>46.3</u>	-21.0	<u>25.3</u>	50.0	<u>24.7</u>

Higher six points are underlined.
Other frequencies : Below the FCC Part15B (15.111) limit
Emission Level = Read + Factor(Pad,Cable,Preamp)
Limit : 2nW = 50dBuV (50ohm impedance)

10.3.3 VFO SCAN (ANT 1) [30 – 1000MHz]

< Graph number #24 >

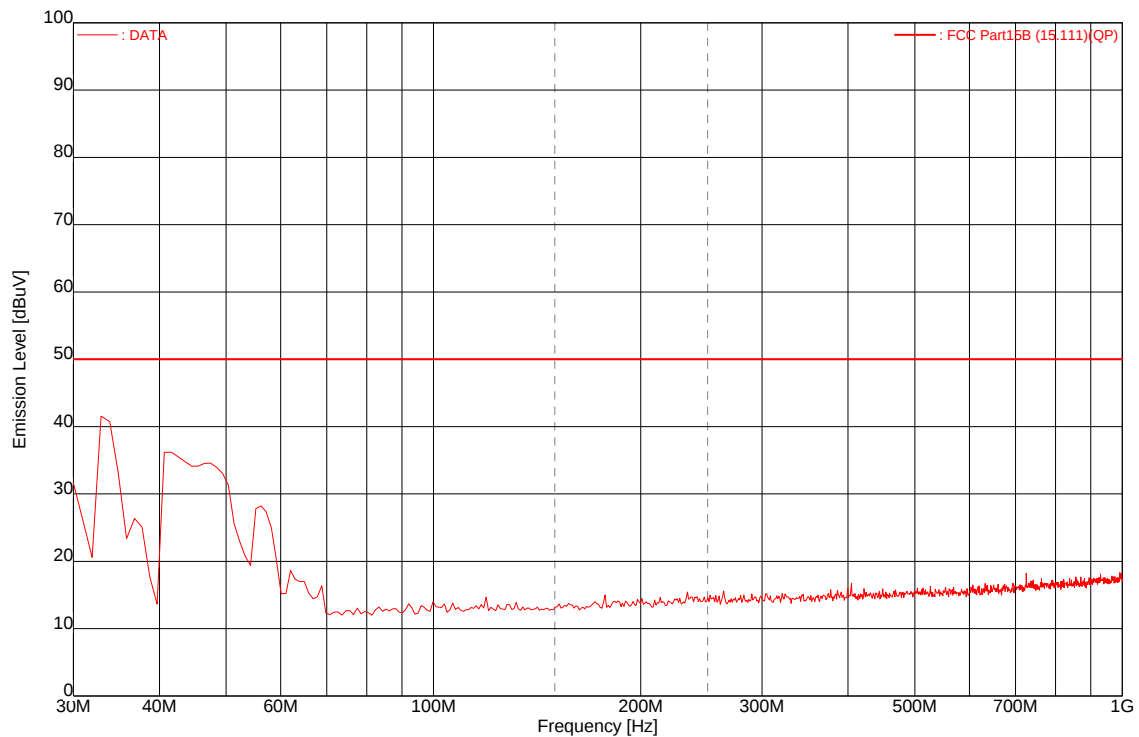
SPECTRUM ANALYSIS

Tochigi No.2 Test Site

20.0decC /45.0%

Date tested : Dec 26 2009
Company : Vertex Standard Co., Ltd.
EUT Name : HF Transceiver
Model number : FT DX 5000MP
Serial number : 9N000005

Test mode : VFO A SCAN(ANT 1)
Power source : AC120V, 60Hz
File number : JT09120024
Engineer : Atsuyuki Morishima
Note :



Frequency [MHz]	Reading [dBuV]	Factor [dB]	Emission [dBuV]	Limit [dBuV]	Margin [dB]
30.45	<u>46.7</u>	-15.3	<u>31.4</u>	50.0	<u>18.6</u>
33.50	<u>57.7</u>	-15.3	<u>42.4</u>	50.0	<u>7.6</u>
37.00	<u>35.8</u>	-15.2	<u>20.6</u>	50.0	<u>29.4</u>
38.70	32.2	-15.2	17.0	50.0	33.0
41.00	<u>51.9</u>	-15.1	<u>36.8</u>	50.0	<u>13.2</u>
47.41	<u>50.2</u>	-15.0	<u>35.2</u>	50.0	<u>14.8</u>
56.00	<u>43.1</u>	-14.9	<u>28.2</u>	50.0	<u>21.8</u>
400.00	24.2	-12.2	12.0	50.0	38.0

Higher six points are underlined.

Other frequencies : Below the FCC Part15B (15.111) limit

Emission Level = Read + Factor (Pad, Cable, Preamp)

Limit : 2nW = 50dBuV (50ohm impedance)

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10.3.4 VFO SCAN (ANT 1) [1000 – 5000MHz]

< Graph number #37 >

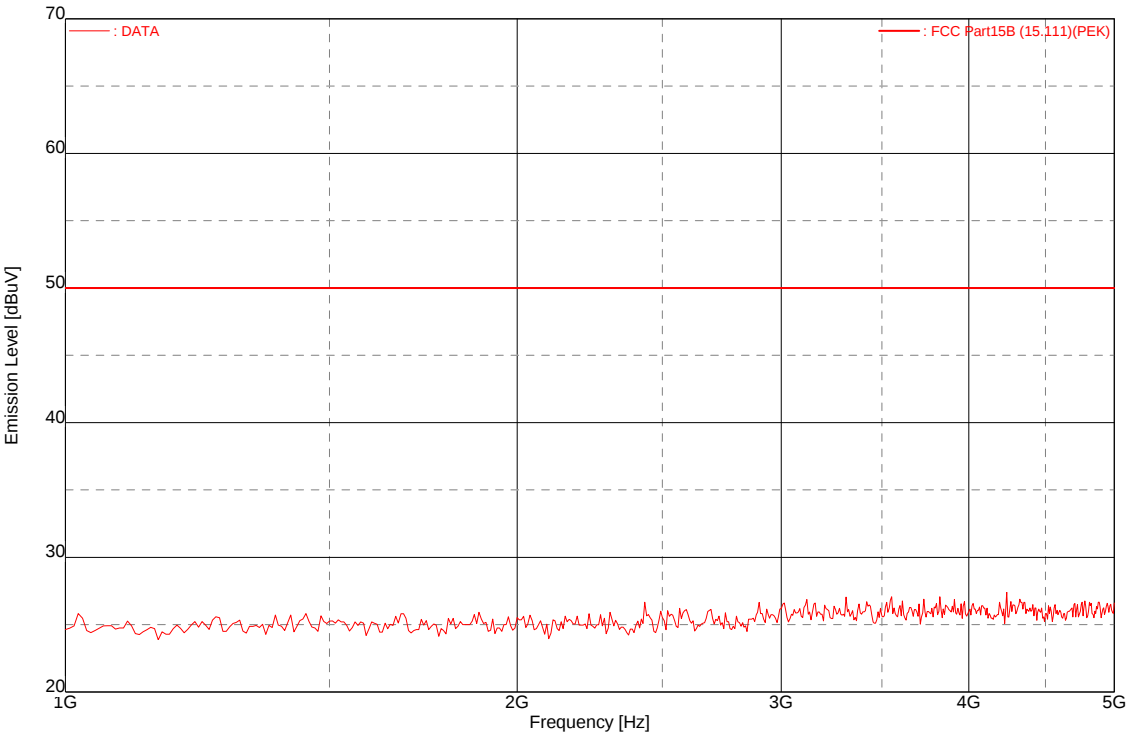
SPECTRUM ANALYSIS

Tochigi No.2 Test Site

20.0decC /45.0%

Date tested : Dec 28 2009
Company : Vertex Standard Co., Ltd.
EUT Name : HF Transceiver
Model number : FT DX 5000MP
Serial number : 9N000005

Test mode : VFO A SCAN(ANT 1)
Power source : AC120V, 60Hz
File number : JT09120024
Engineer : Atsuyuki Morishima
Note :



Frequency [MHz]	Reading [dBuV]	Factor [dB]	Emission [dBuV]	Limit [dBuV]	Margin [dB]
N/A	<u>N/A</u>	N/A	<u>N/A</u>	50.0	<u>N/A</u>

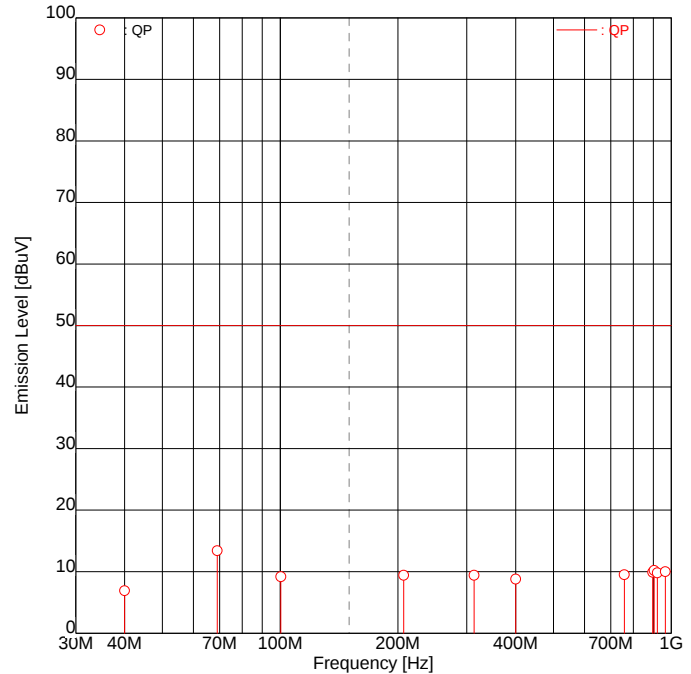
Higher six points are underlined.
Other frequencies : Below the FCC Part15B (15.111) limit
Emission Level = Read + Factor (Pad, Cable, Preamp)
Limit : 2nW = 50dBuV (50ohm impedance)

Note : There is the margin of 20dB over expect for the above points.

10.3.5 Rx A:B:60.000MHz (ANT 2) [30 – 1000MHz]

Intertek Japan K.K.
Tochigi No.2 Test Site
Conducted Power on Antenna Port

APPLICANT : Vertex Standard Co., Ltd.
EUT NAME : HF Transceiver
MODEL NO. : FT DX 5000MP
SERIAL NO. : 9N000005
TEST MODE : Rx A:B:60.000MHz (ANT 2)
POWER SOURCE : AC120V, 60Hz
DATE TESTED : Dec 26 2009
FILE NO. : JT09120024
REGULATION : FCC Part15B (15.111)
TEST METHOD : ANSI C63.4-2003
TEMPERATURE : 20.0 [degC]
HUMIDITY : 45.0 [%]
NOTE :



ENGINEER : Atsuyuki Morishima

FREQUENCY [No]	FREQUENCY [MHz]	READING [dBuV]	FACTOR [dB]	EMISSION [dBuV]	LIMIT [dBuV]	MARGIN [dB]
1	40.0000	22.1	-15.2	6.9	50.0	43.1
2	69.0000	<u>28.1</u>	-14.7	<u>13.4</u>	50.0	<u>36.6</u>
3	100.4500	23.4	-14.2	9.2	50.0	40.8
4	206.9990	22.2	-12.8	9.4	50.0	40.6
5	313.3440	21.4	-12.0	9.4	50.0	40.6
6	400.0000	21.0	-12.2	8.8	50.0	41.2
7	759.0000	<u>20.7</u>	-11.2	<u>9.5</u>	50.0	<u>40.5</u>
8	897.0030	<u>20.2</u>	-10.3	<u>9.9</u>	50.0	<u>40.1</u>
9	904.1000	<u>20.4</u>	-10.2	<u>10.2</u>	50.0	<u>39.8</u>
10	921.6000	<u>20.0</u>	-10.2	<u>9.8</u>	50.0	<u>40.2</u>
11	966.0000	<u>19.9</u>	-9.9	<u>10.0</u>	50.0	<u>40.0</u>

Higher six points are underlined.
Other frequencies : Below the FCC Part15B (15.111) limit
Emission Level = Read + Factor(Pad,Cable,Preamp)
Limit : 2nW = 50dBuV (50ohm impedance)

emiT 3, 0, 0, 0

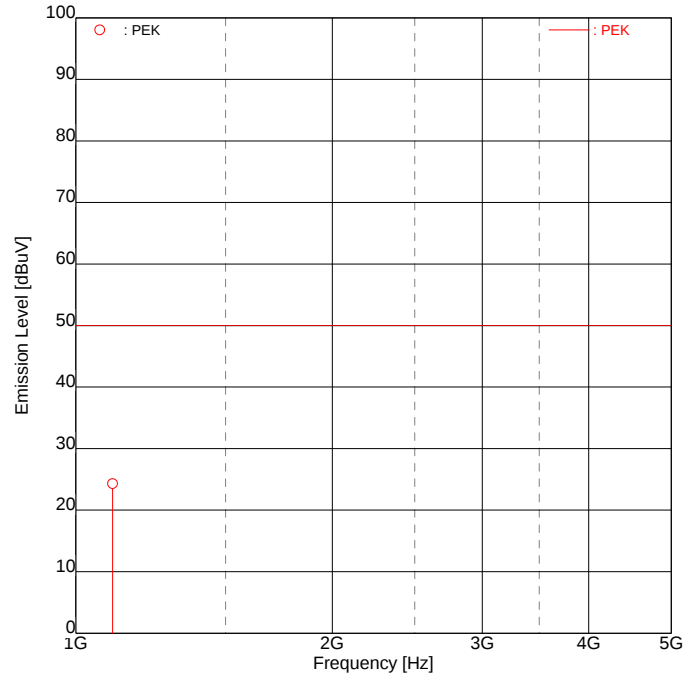
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10.3.6 Rx A:B:60.000MHz (ANT 2) [1000 – 5000MHz]

Intertek Japan K.K.
Tochigi No.2 Test Site
Conducted Power on Antenna Port

APPLICANT : Vertex Standard Co., Ltd.
EUT NAME : HF Transceiver
MODEL NO. : FT DX 5000MP
SERIAL NO. : 9N000005
TEST MODE : Rx A:B:60.000MHz (ANT 2)
POWER SOURCE : AC120V, 60Hz
DATE TESTED : Dec 28 2009
FILE NO. : JT09120024
REGULATION : FCC Part15B (15.111)
TEST METHOD : ANSI C63.4-2003
TEMPERATURE : 20.0 [degC]
HUMIDITY : 45.0 [%]
NOTE :

ENGINEER : Atsuyuki Morishima



FREQUENCY [No]	FREQUENCY [MHz]	READING [dBuV]	FACTOR [dB]	EMISSION [dBuV]	LIMIT [dBuV]	MARGIN [dB]
1	1105.0200	<u>45.3</u>	-21.0	<u>24.3</u>	50.0	<u>25.7</u>

Higher six points are underlined.
Other frequencies : Below the FCC Part15B (15.111) limit
Emission Level = Read + Factor(Pad,Cable,Preamp)
Limit : 2nW = 50dBuV (50ohm impedance)

10.3.7 VFO SCAN (ANT 2) [30 – 1000MHz]

< Graph number #25 >

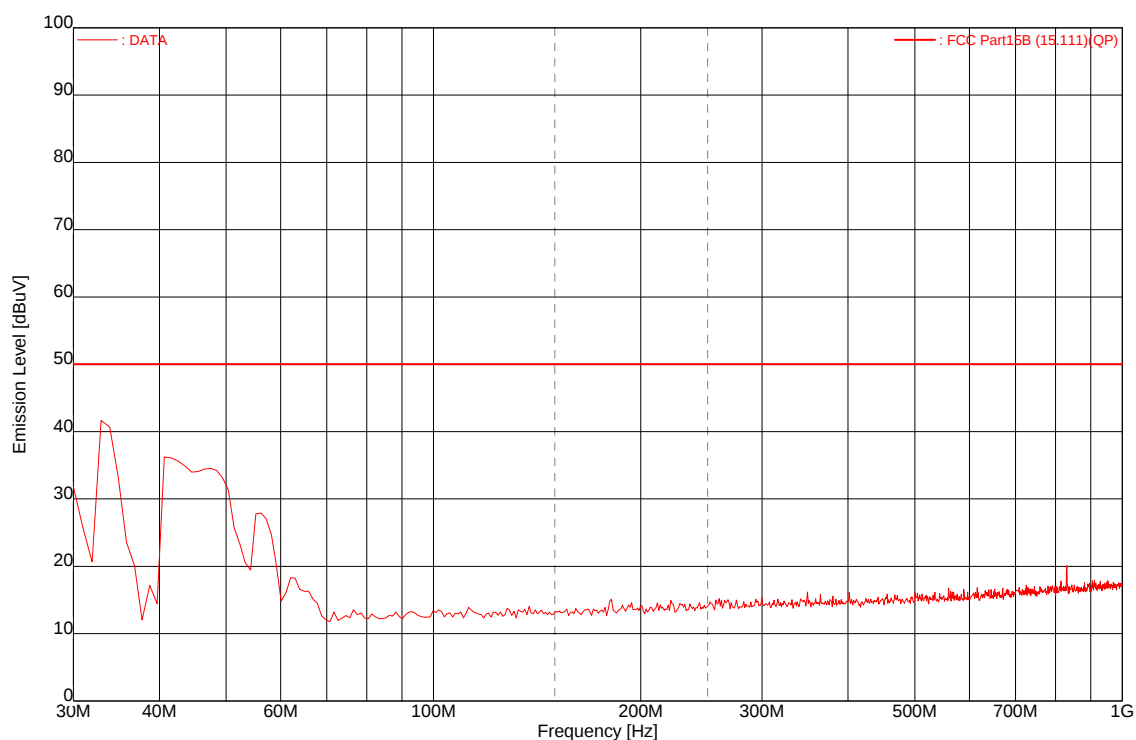
SPECTRUM ANALYSIS

Tochigi No.2 Test Site

22.0decC /45.0%

Date tested : Dec 26 2009
Company : Vertex Standard Co., Ltd.
EUT Name : HF Transceiver
Model number : FT DX 5000MP
Serial number : 9N000005

Test mode : VFO A SCAN(ANT 2)
Power source : AC120V, 60Hz
File number : JT09120024
Engineer : Atsuyuki Morishima
Note :



Frequency [MHz]	Reading [dBuV]	Factor [dB]	Emission [dBuV]	Limit [dBuV]	Margin [dB]
30.45	<u>46.8</u>	-15.3	<u>31.5</u>	50.0	<u>18.5</u>
33.50	<u>57.5</u>	-15.3	<u>42.2</u>	50.0	<u>7.8</u>
37.00	<u>36.0</u>	-15.2	<u>20.8</u>	50.0	<u>29.2</u>
38.70	32.5	-15.2	17.3	50.0	32.7
41.00	<u>51.9</u>	-15.1	<u>36.8</u>	50.0	<u>13.2</u>
47.41	<u>50.2</u>	-15.0	<u>35.2</u>	50.0	<u>14.8</u>
56.00	<u>42.9</u>	-14.9	<u>28.0</u>	50.0	<u>22.0</u>
400.00	21.8	-12.2	9.6	50.0	40.4

Higher six points are underlined.

Other frequencies : Below the FCC Part15B (15.111) limit

Emission Level = Read + Factor (Pad, Cable, Preamp)

Limit : 2nW = 50dBuV (50ohm impedance)

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10.3.8 VFO SCAN (ANT 2) [1000 – 5000MHz]

< Graph number #38 >

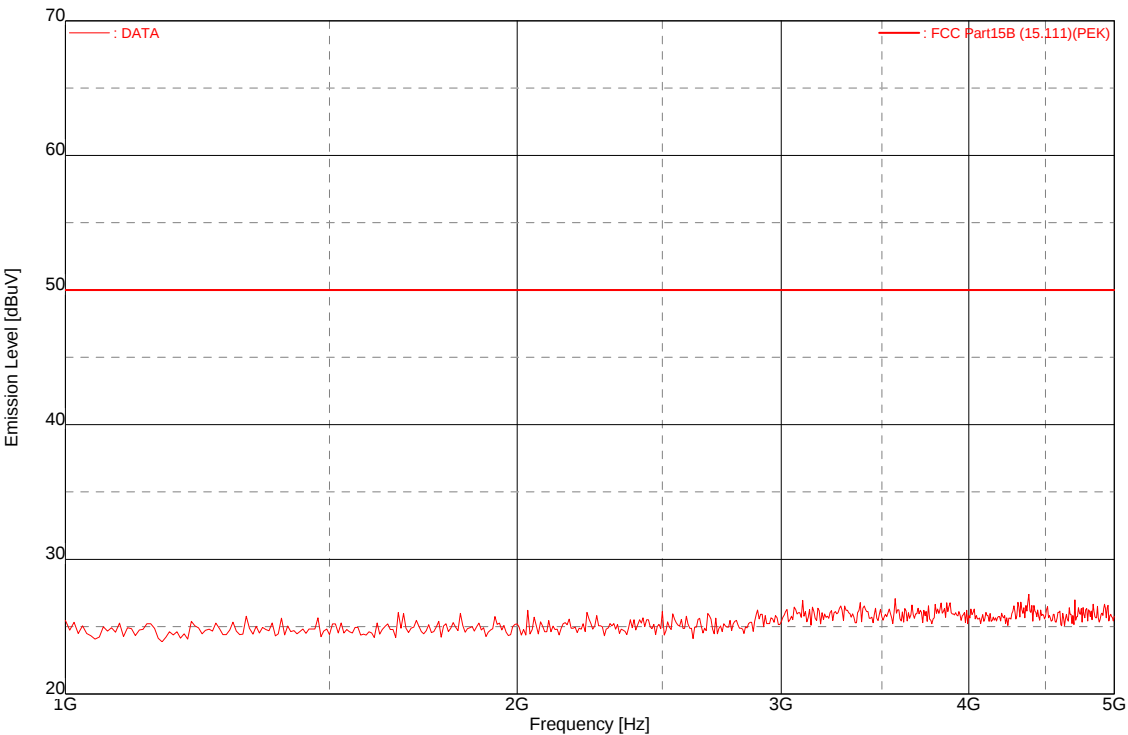
SPECTRUM ANALYSIS

Tochigi No.2 Test Site

20.0decC /45.0%

Date tested : Dec 28 2009
Company : Vertex Standard Co., Ltd.
EUT Name : HF Transceiver
Model number : FT DX 5000MP
Serial number : 9N000005

Test mode : VFO A SCAN(ANT 2)
Power source : AC120V, 60Hz
File number : JT09120024
Engineer : Atsuyuki Morishima
Note :



Frequency [MHz]	Reading [dBuV]	Factor [dB]	Emission [dBuV]	Limit [dBuV]	Margin [dB]
N/A	<u>N/A</u>	N/A	<u>N/A</u>	50.0	<u>N/A</u>

Higher six points are underlined.
Other frequencies : Below the FCC Part15B (15.111) limit
Emission Level = Read + Factor (Pad, Cable, Preamp)
Limit : 2nW = 50dBuV (50ohm impedance)

Note : There is the margin of 20dB over expect for the above points.

10.3.9 Rx A:B:60.000MHz (ANT 3) [30 – 1000MHz]

Intertek Japan K.K.

Tochigi No.2 Test Site

Conducted Power on Antenna Port

APPLICANT : Vertex Standard Co., Ltd.

EUT NAME : HF Transceiver

MODEL NO. : FT DX 5000MP

SERIAL NO. : 9N000005

TEST MODE : Rx A:B:60.000MHz (ANT 3)

POWER SOURCE : AC120V, 60Hz

DATE TESTED : Dec 26 2009

FILE NO. : JT09120024

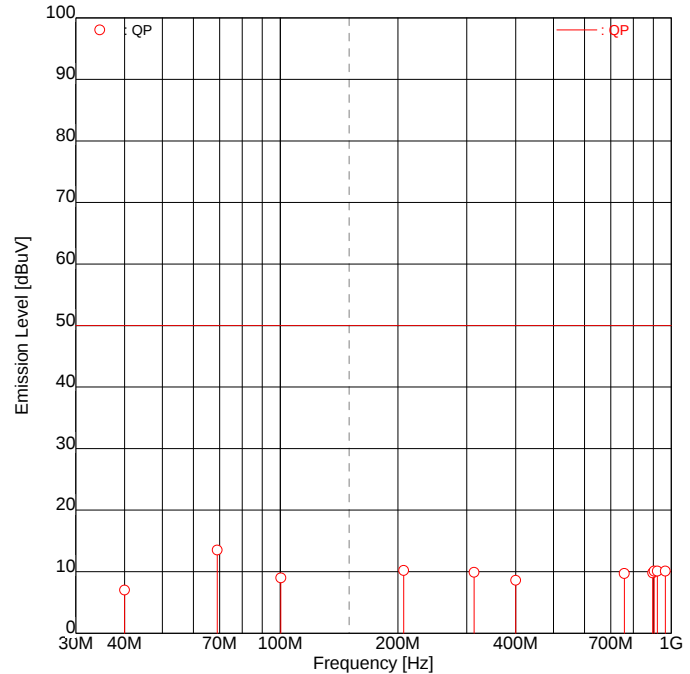
REGULATION : FCC Part15B (15.111)

TEST METHOD : ANSI C63.4-2003

TEMPERATURE : 20.0 [degC]

HUMIDITY : 45.0 [%]

NOTE :



ENGINEER : Atsuyuki Morishima

FREQUENCY [No]	FREQUENCY [MHz]	READING [dBuV]	FACTOR [dB]	EMISSION [dBuV]	LIMIT [dBuV]	MARGIN [dB]
1	40.0000	22.2	-15.2	7.0	50.0	43.0
2	69.0000	<u>28.2</u>	-14.7	<u>13.5</u>	50.0	<u>36.5</u>
3	100.4500	23.2	-14.2	9.0	50.0	41.0
4	206.9990	<u>23.0</u>	-12.8	<u>10.2</u>	50.0	<u>39.8</u>
5	313.3440	<u>21.9</u>	-12.0	<u>9.9</u>	50.0	<u>40.1</u>
6	400.0000	20.8	-12.2	8.6	50.0	41.4
7	759.0000	20.9	-11.2	9.7	50.0	40.3
8	897.0030	20.1	-10.3	9.8	50.0	40.2
9	904.1000	<u>20.3</u>	-10.2	<u>10.1</u>	50.0	<u>39.9</u>
10	921.6000	<u>20.3</u>	-10.2	<u>10.1</u>	50.0	<u>39.9</u>
11	966.0000	<u>20.0</u>	-9.9	<u>10.1</u>	50.0	<u>39.9</u>

Higher six points are underlined.

Other frequencies : Below the FCC Part15B (15.111) limit

Emission Level = Read + Factor(Pad,Cable,Preamp)

Limit : 2nW = 50dBuV (50ohm impedance)

emiT 3, 0, 0, 0

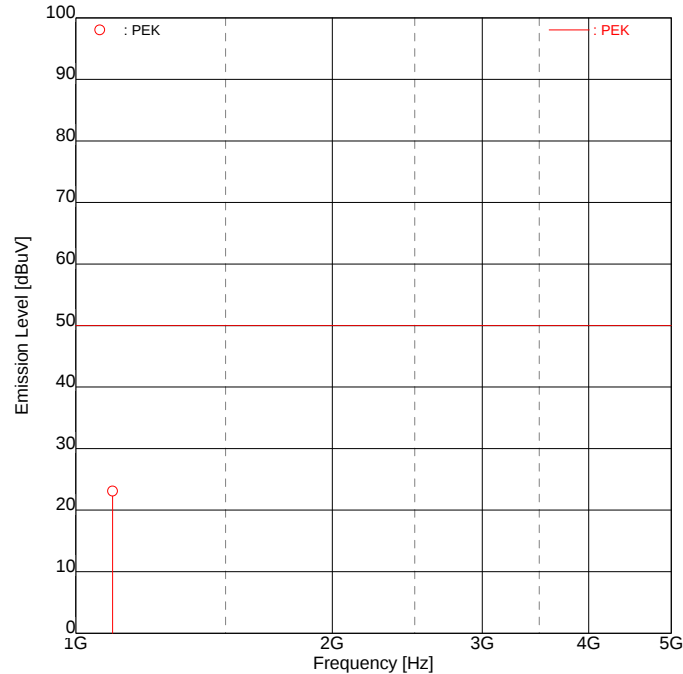
Copyright(c)2007 Intertek Japan K.K.

10.3.10 Rx A:B:60.000MHz (ANT 3) [1000 – 5000MHz]

Intertek Japan K.K.
Tochigi No.2 Test Site
Conducted Power on Antenna Port

APPLICANT : Vertex Standard Co., Ltd.
EUT NAME : HF Transceiver
MODEL NO. : FT DX 5000MP
SERIAL NO. : 9N000005
TEST MODE : Rx A:B:60.000MHz (ANT 3)
POWER SOURCE : AC120V, 60Hz
DATE TESTED : Dec 28 2009
FILE NO. : JT09120024
REGULATION : FCC Part15B (15.111)
TEST METHOD : ANSI C63.4-2003
TEMPERATURE : 20.0 [degC]
HUMIDITY : 45.0 [%]
NOTE :

ENGINEER : Atsuyuki Morishima



FREQUENCY [No]	FREQUENCY [MHz]	READING [dBuV]	FACTOR [dB]	EMISSION [dBuV]	LIMIT [dBuV]	MARGIN [dB]
1	1105.0200	<u>44.1</u>	-21.0	<u>23.1</u>	50.0	<u>26.9</u>

Higher six points are underlined.
Other frequencies : Below the FCC Part15B (15.111) limit
Emission Level = Read + Factor(Pad,Cable,Preamp)
Limit : 2nW = 50dBuV (50ohm impedance)

10.3.11 VFO SCAN (ANT 3) [30 – 1000MHz]

< Graph number #26 >

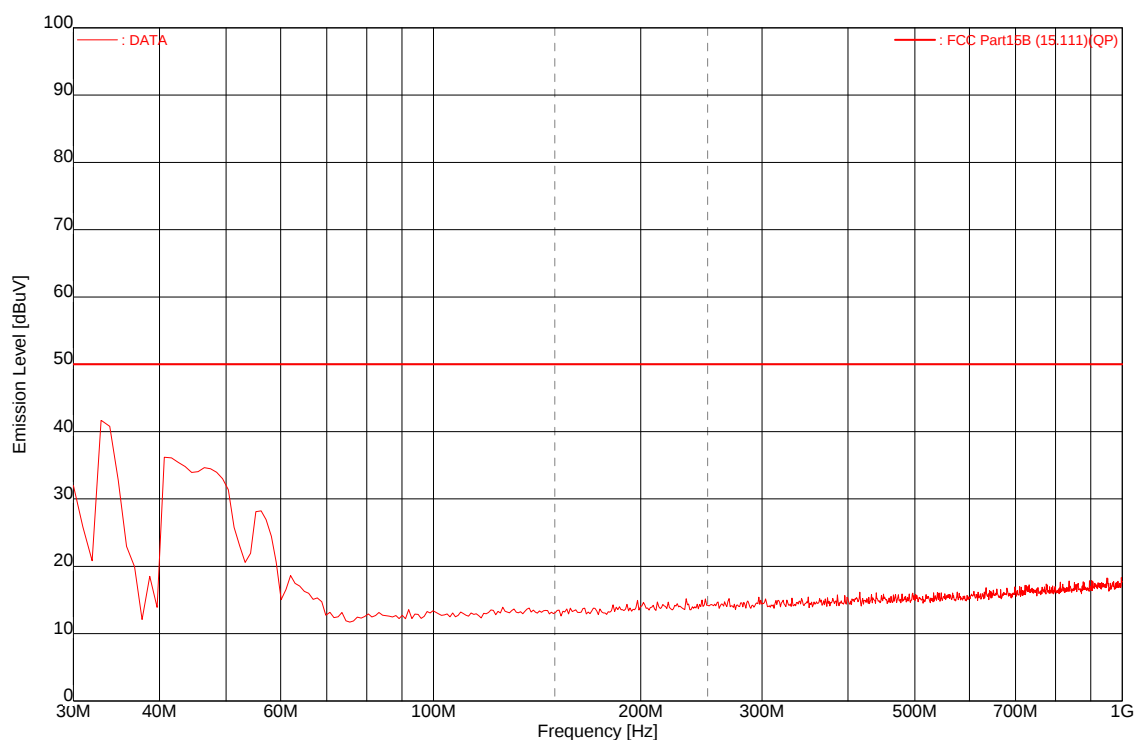
SPECTRUM ANALYSIS

Tochigi No.2 Test Site

21.0decC /45.0%

Date tested : Dec 26 2009
Company : Vertex Standard Co., Ltd.
EUT Name : HF Transceiver
Model number : FT DX 5000MP
Serial number : 9N000005

Test mode : VFO A SCAN(ANT 3)
Power source : AC120V, 60Hz
File number : JT09120024
Engineer : Atsuyuki Morishima
Note :



Frequency [MHz]	Reading [dBuV]	Factor [dB]	Emission [dBuV]	Limit [dBuV]	Margin [dB]
30.45	<u>46.8</u>	-15.3	<u>31.5</u>	50.0	<u>18.5</u>
33.50	<u>57.5</u>	-15.3	<u>42.2</u>	50.0	<u>7.8</u>
37.00	<u>35.8</u>	-15.2	<u>20.6</u>	50.0	<u>29.4</u>
38.70	32.5	-15.2	17.3	50.0	32.7
41.00	<u>51.8</u>	-15.1	<u>36.7</u>	50.0	<u>13.3</u>
47.41	<u>50.1</u>	-15.0	<u>35.1</u>	50.0	<u>14.9</u>
56.00	<u>43.0</u>	-14.9	<u>28.1</u>	50.0	<u>21.9</u>
400.00	23.6	-12.2	11.4	50.0	38.6

Higher six points are underlined.

Other frequencies : Below the FCC Part15B (15.111) limit

Emission Level = Read + Factor (Pad, Cable, Preamp)

Limit : 2nW = 50dBuV (50ohm impedance)

10.3.12 VFO SCAN (ANT 3) [1000 – 5000MHz]

< Graph number #39 >

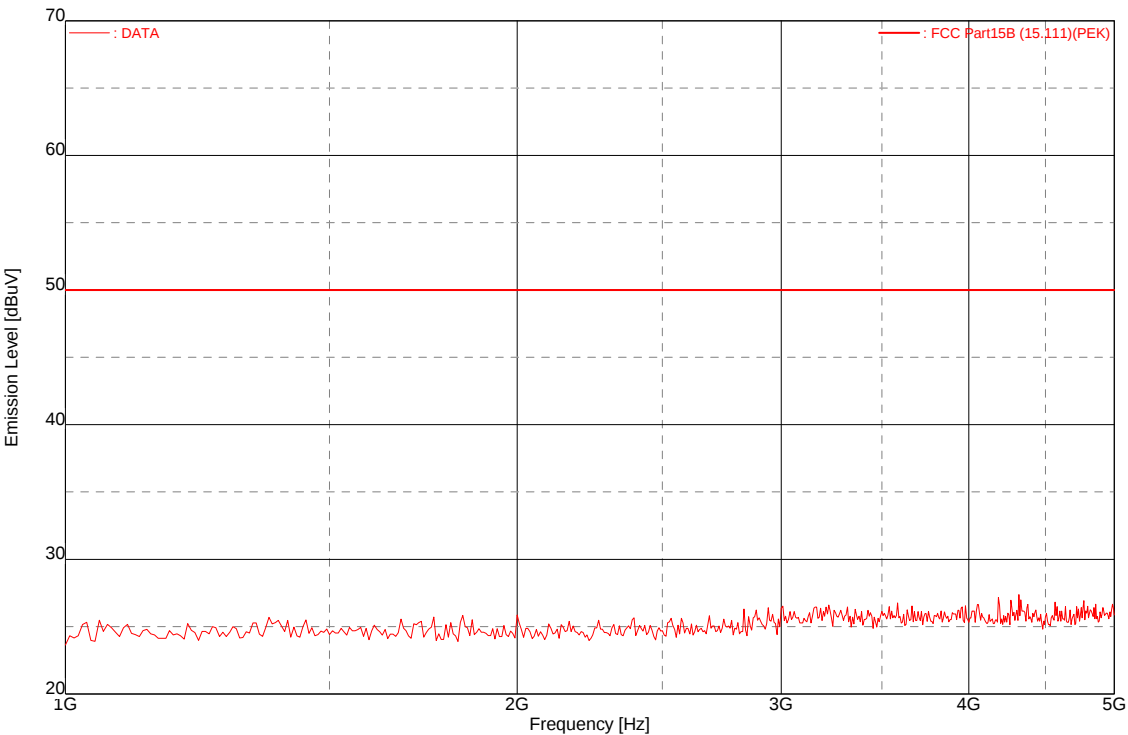
SPECTRUM ANALYSIS

Tochigi No.2 Test Site

20.0decC /45.0%

Date tested : Dec 28 2009
Company : Vertex Standard Co., Ltd.
EUT Name : HF Transceiver
Model number : FT DX 5000MP
Serial number : 9N000005

Test mode : VFO A SCAN(ANT 3)
Power source : AC120V, 60Hz
File number : JT09120024
Engineer : Atsuyuki Morishima
Note :



Frequency [MHz]	Reading [dBuV]	Factor [dB]	Emission [dBuV]	Limit [dBuV]	Margin [dB]
N/A	<u>N/A</u>	N/A	<u>N/A</u>	50.0	<u>N/A</u>

Higher six points are underlined.
Other frequencies : Below the FCC Part15B (15.111) limit
Emission Level = Read + Factor (Pad, Cable, Preamp)
Limit : 2nW = 50dBuV (50ohm impedance)

Note : There is the margin of 20dB over expect for the above points.

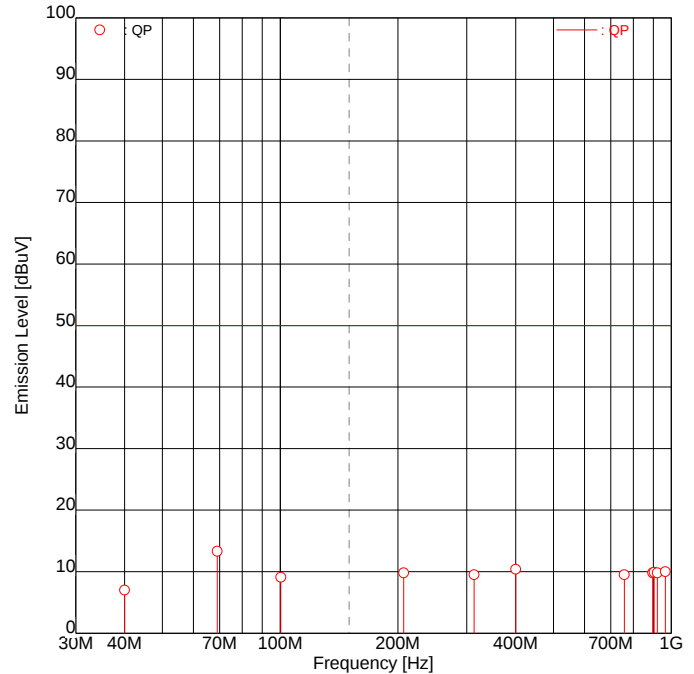
10.3.13 Rx A:B:60.000MHz (ANT 4) [30 – 1000MHz]

Intertek Japan K.K.

Tochigi No.2 Test Site

Conducted Power on Antenna Port

APPLICANT : Vertex Standard Co., Ltd.
EUT NAME : HF Transceiver
MODEL NO. : FT DX 5000MP
SERIAL NO. : 9N000005
TEST MODE : Rx A:B:60.000MHz (ANT 4)
POWER SOURCE : AC120V, 60Hz
DATE TESTED : Dec 26 2009
FILE NO. : JT09120024
REGULATION : FCC Part15B (15.111)
TEST METHOD : ANSI C63.4-2003
TEMPERATURE : 20.0 [degC]
HUMIDITY : 45.0 [%]
NOTE :



ENGINEER : Atsuyuki Morishima

FREQUENCY [No]	FREQUENCY [MHz]	READING [dBuV]	FACTOR [dB]	EMISSION [dBuV]	LIMIT [dBuV]	MARGIN [dB]
1	40.0000	22.2	-15.2	7.0	50.0	43.0
2	69.0000	<u>28.0</u>	-14.7	<u>13.3</u>	50.0	<u>36.7</u>
3	100.4500	23.3	-14.2	9.1	50.0	40.9
4	206.9990	<u>22.6</u>	-12.8	<u>9.8</u>	50.0	<u>40.2</u>
5	313.3440	21.5	-12.0	9.5	50.0	40.5
6	400.0000	<u>22.6</u>	-12.2	<u>10.4</u>	50.0	<u>39.6</u>
7	759.0000	20.7	-11.2	9.5	50.0	40.5
8	897.0030	<u>20.1</u>	-10.3	<u>9.8</u>	50.0	<u>40.2</u>
9	904.1000	<u>20.1</u>	-10.2	<u>9.9</u>	50.0	<u>40.1</u>
10	921.6000	<u>20.0</u>	-10.2	<u>9.8</u>	50.0	<u>40.2</u>
11	966.0000	<u>19.9</u>	-9.9	<u>10.0</u>	50.0	<u>40.0</u>

Higher six points are underlined.
Other frequencies : Below the FCC Part15B (15.111) limit
Emission Level = Read + Factor(Pad,Cable,Preamp)
Limit : 2nW = 50dBuV (50ohm impedance)

emiT 3, 0, 0, 0

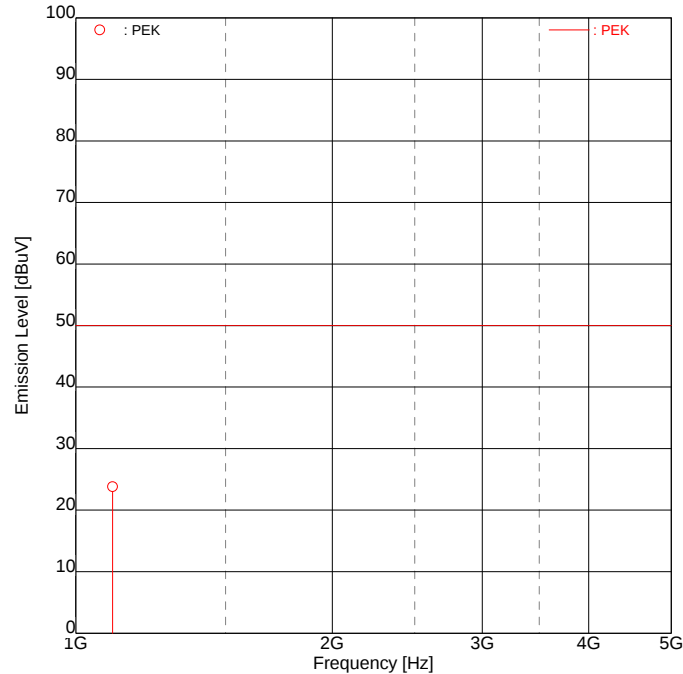
Copyright(c)2007 Intertek Japan K.K.

10.3.14 Rx A:B:60.000MHz (ANT 4) [1000 – 5000MHz]

Intertek Japan K.K.
Tochigi No.2 Test Site
Conducted Power on Antenna Port

APPLICANT : Vertex Standard Co., Ltd.
EUT NAME : HF Transceiver
MODEL NO. : FT DX 5000MP
SERIAL NO. : 9N000005
TEST MODE : Rx A:B:60.000MHz (ANT 4)
POWER SOURCE : AC120V, 60Hz
DATE TESTED : Dec 28 2009
FILE NO. : JT09120024
REGULATION : FCC Part15B (15.111)
TEST METHOD : ANSI C63.4-2003
TEMPERATURE : 20.0 [degC]
HUMIDITY : 45.0 [%]
NOTE :

ENGINEER : Atsuyuki Morishima



FREQUENCY [No]	FREQUENCY [MHz]	READING [dBuV]	FACTOR [dB]	EMISSION [dBuV]	LIMIT [dBuV]	MARGIN [dB]
1	1105.0200	<u>44.8</u>	-21.0	<u>23.8</u>	50.0	<u>26.2</u>

Higher six points are underlined.
Other frequencies : Below the FCC Part15B (15.111) limit
Emission Level = Read + Factor(Pad,Cable,Preamp)
Limit : 2nW = 50dBuV (50ohm impedance)

10.3.15 VFO SCAN (ANT 4) [30 – 1000MHz]

< Graph number #27 >

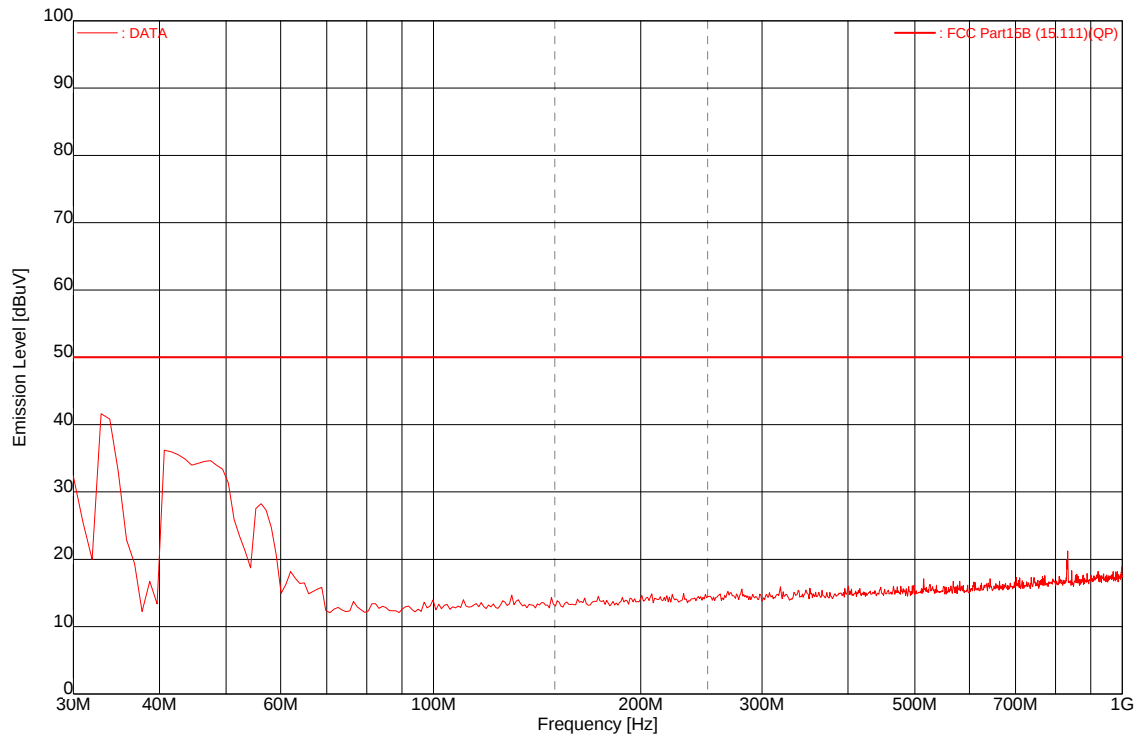
SPECTRUM ANALYSIS

Tochigi No.2 Test Site

21.0degC /45.0%

Date tested : Dec 26 2009
Company : Vertex Standard Co., Ltd.
EUT Name : HF Transceiver
Model number : FT DX 5000MP
Serial number : 9N000005

Test mode : VFO A SCAN(ANT 4)
Power source : AC120V, 60Hz
File number : JT09120024
Engineer : Atsuyuki Morishima
Note :



Frequency [MHz]	Reading [dBuV]	Factor [dB]	Emission [dBuV]	Limit [dBuV]	Margin [dB]
30.45	<u>46.8</u>	-15.3	<u>31.5</u>	50.0	<u>18.5</u>
33.50	<u>57.5</u>	-15.3	<u>42.2</u>	50.0	<u>7.8</u>
37.00	<u>36.1</u>	-15.2	<u>20.9</u>	50.0	<u>29.1</u>
38.70	32.7	-15.2	17.5	50.0	32.5
41.00	<u>51.8</u>	-15.1	<u>36.7</u>	50.0	<u>13.3</u>
47.41	<u>50.1</u>	-15.0	<u>35.1</u>	50.0	<u>14.9</u>
56.00	<u>42.8</u>	-14.9	<u>27.9</u>	50.0	<u>22.1</u>
400.00	23.2	-12.2	11.0	50.0	39.0

Higher six points are underlined.

Other frequencies : Below the FCC Part15B (15.111) limit

Emission Level = Read + Factor (Pad, Cable, Preamp)

Limit : 2nW = 50dBuV (50ohm impedance)

10.3.16 VFO SCAN (ANT 4) [1000 – 5000MHz]

< Graph number #40 >

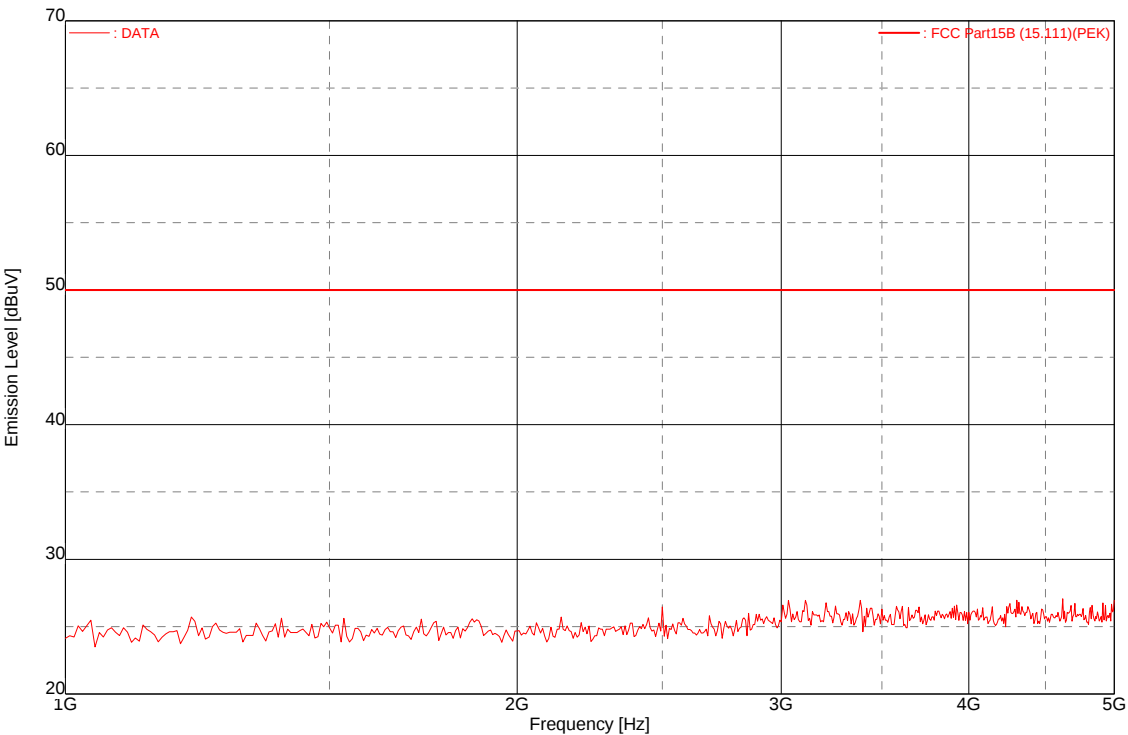
SPECTRUM ANALYSIS

Tochigi No.2 Test Site

22.0decC /45.0%

Date tested : Dec 28 2009
Company : Vertex Standard Co., Ltd.
EUT Name : HF Transceiver
Model number : FT DX 5000MP
Serial number : 9N000005

Test mode : VFO A SCAN(ANT 4)
Power source : AC120V, 60Hz
File number : JT09120024
Engineer : Atsuyuki Morishima
Note :



Frequency [MHz]	Reading [dBuV]	Factor [dB]	Emission [dBuV]	Limit [dBuV]	Margin [dB]
N/A	<u>N/A</u>	N/A	<u>N/A</u>	50.0	<u>N/A</u>

Higher six points are underlined.
Other frequencies : Below the FCC Part15B (15.111) limit
Emission Level = Read + Factor (Pad, Cable, Preamp)
Limit : 2nW = 50dBuV (50ohm impedance)

Note : There is the margin of 20dB over expect for the above points.

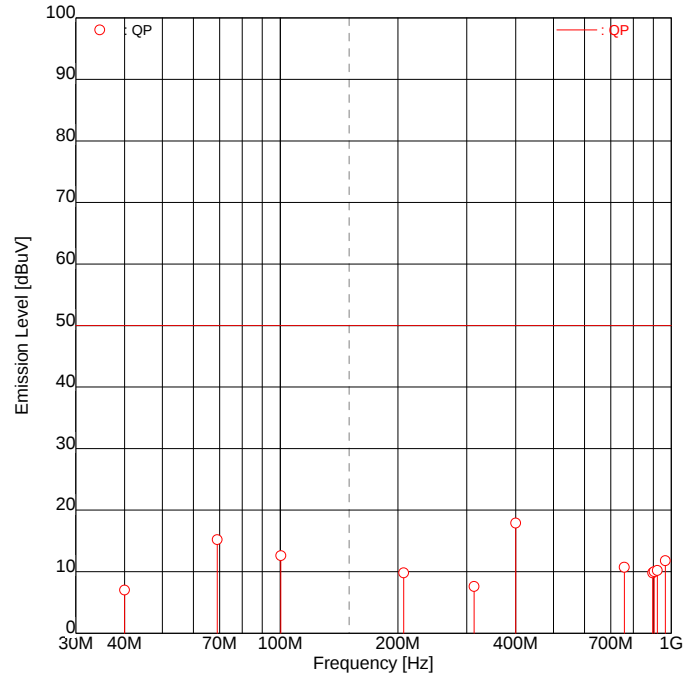
10.3.17 Rx A:B:60.000MHz (RX ANT) [30 – 1000MHz]

Intertek Japan K.K.

Tochigi No.2 Test Site

Conducted Power on Antenna Port

APPLICANT : Vertex Standard Co., Ltd.
EUT NAME : HF Transceiver
MODEL NO. : FT DX 5000MP
SERIAL NO. : 9N000005
TEST MODE : Rx A:B:60.000MHz (RX ANT)
POWER SOURCE : AC120V, 60Hz
DATE TESTED : Dec 26 2009
FILE NO. : JT09120024
REGULATION : FCC Part15B (15.111)
TEST METHOD : ANSI C63.4-2003
TEMPERATURE : 20.0 [degC]
HUMIDITY : 45.0 [%]
NOTE :



ENGINEER : Atsuyuki Morishima

FREQUENCY [No]	FREQUENCY [MHz]	READING [dBuV]	FACTOR [dB]	EMISSION [dBuV]	LIMIT [dBuV]	MARGIN [dB]
1	40.0000	22.2	-15.2	7.0	50.0	43.0
2	69.0000	<u>29.9</u>	-14.7	<u>15.2</u>	50.0	<u>34.8</u>
3	100.4500	<u>26.8</u>	-14.2	<u>12.6</u>	50.0	<u>37.4</u>
4	206.9990	22.6	-12.8	9.8	50.0	40.2
5	313.3440	19.6	-12.0	7.6	50.0	42.4
6	400.0000	<u>30.1</u>	-12.2	<u>17.9</u>	50.0	<u>32.1</u>
7	759.0000	<u>21.9</u>	-11.2	<u>10.7</u>	50.0	<u>39.3</u>
8	897.0030	20.1	-10.3	9.8	50.0	40.2
9	904.1000	20.2	-10.2	10.0	50.0	40.0
10	921.6000	<u>20.4</u>	-10.2	<u>10.2</u>	50.0	<u>39.8</u>
11	966.0000	<u>21.7</u>	-9.9	<u>11.8</u>	50.0	<u>38.2</u>

Higher six points are underlined.
Other frequencies : Below the FCC Part15B (15.111) limit
Emission Level = Read + Factor(Pad,Cable,Preamp)
Limit : 2nW = 50dBuV (50ohm impedance)

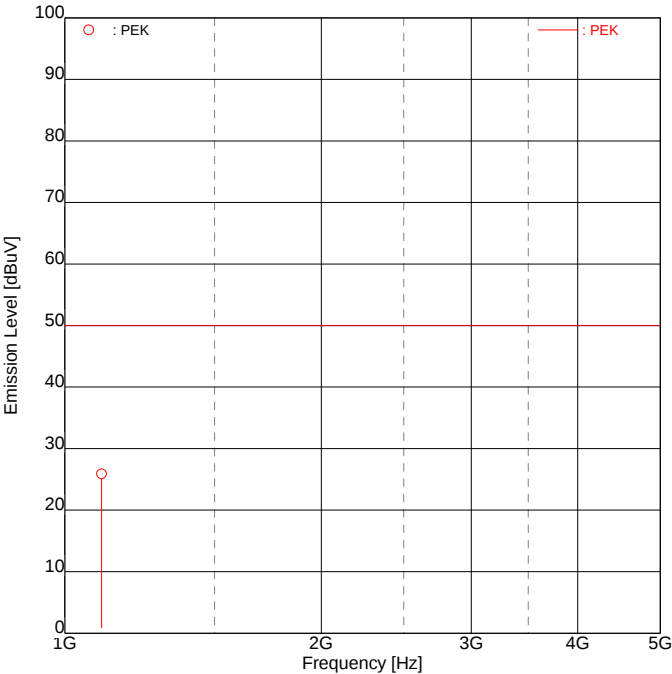
emiT 3, 0, 0, 0

Copyright(c)2007 Intertek Japan K.K.

10.3.18 Rx A:B:60.000MHz (RX ANT) [1000 – 5000MHz]

Intertek Japan K.K.
Tochigi No.2 Test Site
Conducted Power on Antenna Port

APPLICANT : Vertex Standard Co., Ltd.
EUT NAME : HF Transceiver
MODEL NO. : FT DX 5000MP
SERIAL NO. : 9N000005
TEST MODE : Rx A:B:60.000MHz (RX ANT)
POWER SOURCE : AC120V, 60Hz
DATE TESTED : Dec 28 2009
FILE NO. : JT09120024
REGULATION : FCC Part15B (15.111)
TEST METHOD : ANSI C63.4-2003
TEMPERATURE : 20.0 [degC]
HUMIDITY : 45.0 [%]
NOTE :



ENGINEER : Atsuyuki Morishima

FREQUENCY [No]	FREQUENCY [MHz]	READING [dBuV]	FACTOR [dB]	EMISSION [dBuV]	LIMIT [dBuV]	MARGIN [dB]
1	1105.0200	<u>46.9</u>	-21.0	<u>25.9</u>	50.0	<u>24.1</u>

Higher six points are underlined.
Other frequencies : Below the FCC Part15B (15.111) limit
Emission Level = Read + Factor(Pad,Cable,Preamp)
Limit : 2nW = 50dBuV (50ohm impedance)

emiT 3, 0, 0, 0

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10.3.19 VFO SCAN (RX ANT) [30 – 1000MHz]

< Graph number #28 >

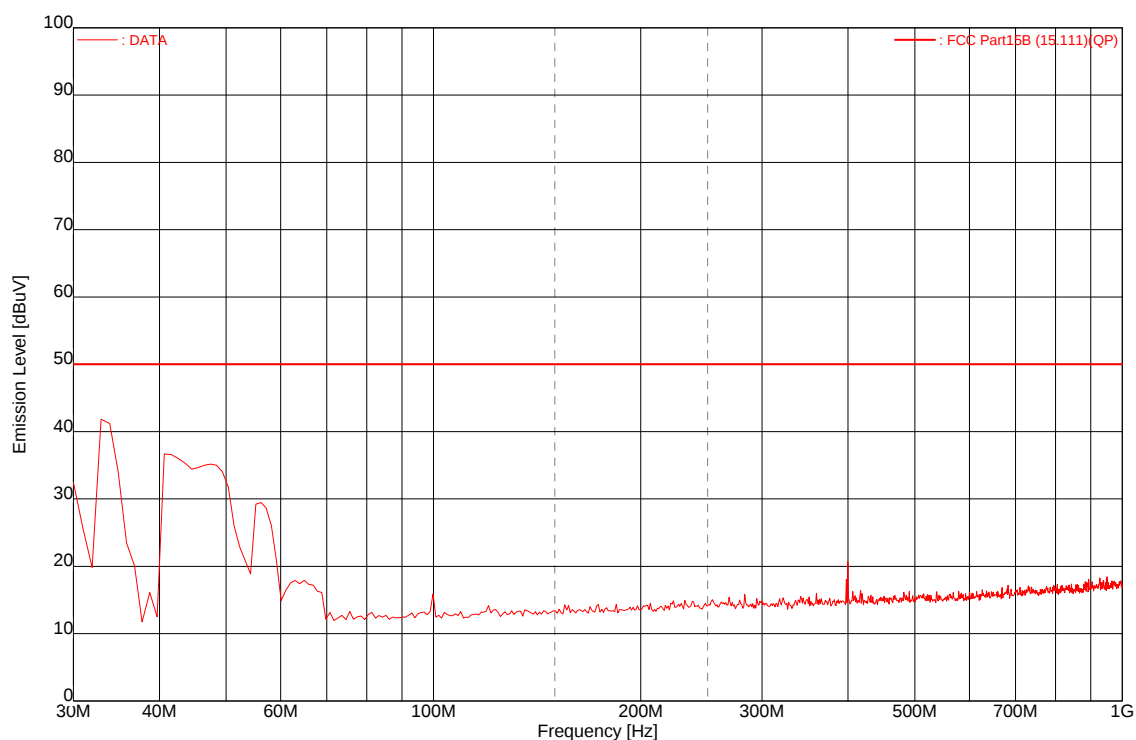
SPECTRUM ANALYSIS

Tochigi No.2 Test Site

21.0degC /45.0%

Date tested : Dec 26 2009
Company : Vertex Standard Co., Ltd.
EUT Name : HF Transceiver
Model number : FT DX 5000MP
Serial number : 9N000005

Test mode : VFO A SCAN(RX ANT)
Power source : AC120V, 60Hz
File number : JT09120024
Engineer : Atsuyuki Morishima
Note :



Frequency [MHz]	Reading [dBuV]	Factor [dB]	Emission [dBuV]	Limit [dBuV]	Margin [dB]
30.45	<u>46.8</u>	-15.3	<u>31.5</u>	50.0	<u>18.5</u>
33.50	<u>57.6</u>	-15.3	<u>42.3</u>	50.0	<u>7.7</u>
37.00	<u>36.0</u>	-15.2	<u>20.8</u>	50.0	<u>29.2</u>
38.70	31.7	-15.2	16.5	50.0	33.5
41.00	<u>52.2</u>	-15.1	<u>37.1</u>	50.0	<u>12.9</u>
47.41	<u>50.8</u>	-15.0	<u>35.8</u>	50.0	<u>14.2</u>
56.00	<u>44.5</u>	-14.9	<u>29.6</u>	50.0	<u>20.4</u>
400.00	30.6	-12.2	18.4	50.0	31.6

Higher six points are underlined.

Other frequencies : Below the FCC Part15B (15.111) limit

Emission Level = Read + Factor (Pad, Cable, Preamp)

Limit : 2nW = 50dBuV (50ohm impedance)

10.3.20 VFO SCAN (RX ANT) [1000 – 5000MHz]

< Graph number #41 >

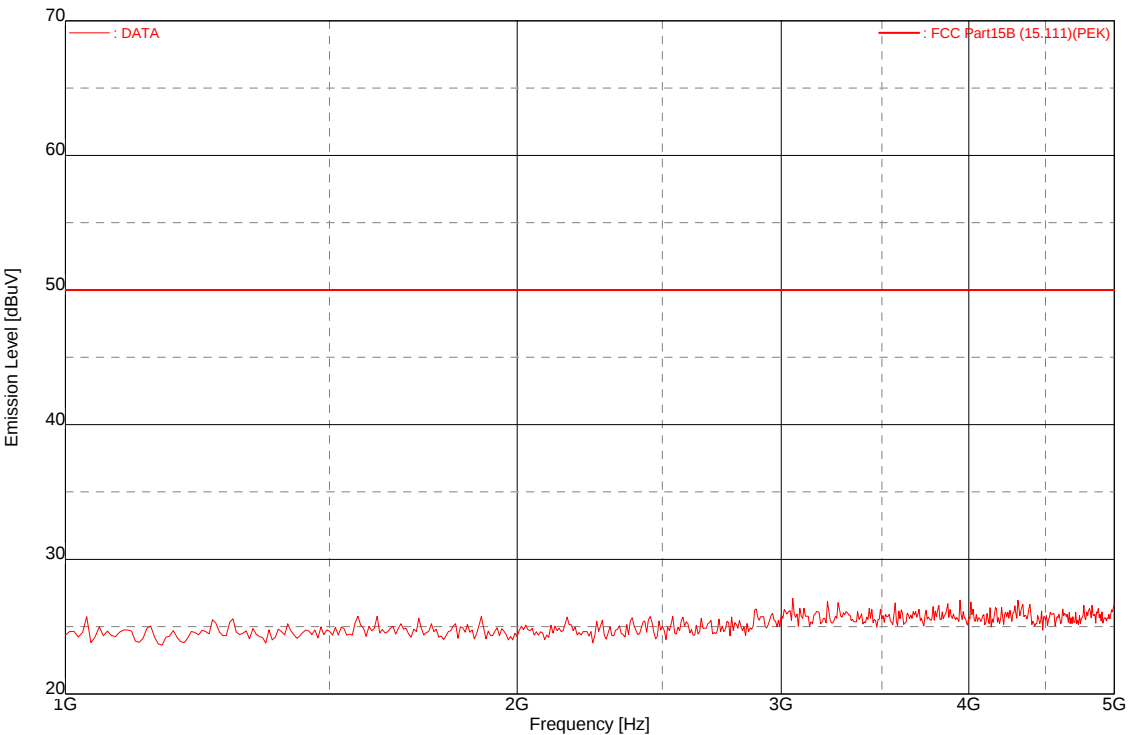
SPECTRUM ANALYSIS

Tochigi No.2 Test Site

22.0decC /45.0%

Date tested : Dec 28 2009
Company : Vertex Standard Co., Ltd.
EUT Name : HF Transceiver
Model number : FT DX 5000MP
Serial number : 9N000005

Test mode : VFO A SCAN(RX ANT)
Power source : AC120V, 60Hz
File number : JT09120024
Engineer : Atsuyuki Morishima
Note :



Frequency [MHz]	Reading [dBuV]	Factor [dB]	Emission [dBuV]	Limit [dBuV]	Margin [dB]
N/A	<u>N/A</u>	N/A	<u>N/A</u>	50.0	<u>N/A</u>

Higher six points are underlined.
Other frequencies : Below the FCC Part15B (15.111) limit
Emission Level = Read + Factor (Pad, Cable, Preamp)
Limit : 2nW = 50dBuV (50ohm impedance)

Note : There is the margin of 20dB over expect for the above points.

10.4 38dB Rejection Test (15.121(b))

10.4.1 VFO SCAN (ANT1)

Location	:	Tochigi No.2 Test Site
Date Tested	:	January 4, 2010 to January 5, 2010
Temperature	:	20 to 22 [degC]
Humidity	:	45 to 47 [%]
Engineer	:	Atsuyuki Morishima

Injected Frequency [MHz]	Detected Frequency [MHz]	12dB SINAD Reading Injected Frequency [dBm]	12dB SINAD Reading Detected Frequency	Rejection Level [dB]	Margin [dB]
824.040	No Point Detected	N / A	N / A	N / A	N / A
836.505	No Point Detected	N / A	N / A	N / A	N / A
848.970	No Point Detected	N / A	N / A	N / A	N / A
869.040	No Point Detected	N / A	N / A	N / A	N / A
881.505	No Point Detected	N / A	N / A	N / A	N / A
893.970	No Point Detected	N / A	N / A	N / A	N / A

The Audio Analyzer condition :
12dB SINAD measurment level = 850mV.

10.4.2 VFO SCAN (ANT2)

Location	:	Tochigi No.2 Test Site
Date Tested	:	January 4, 2010 to January 5, 2010
Temperature	:	20 to 22 [degC]
Humidity	:	45 to 47 [%]
Engineer	:	Atsuyuki Morishima

Injected Frequency [MHz]	Detected Frequency [MHz]	12dB SINAD Reading Injected Frequency [dBm]	12dB SINAD Reading Detected Frequency	Rejection Level [dB]	Margin [dB]
824.040	No Point Detected	N / A	N / A	N / A	N / A
836.505	No Point Detected	N / A	N / A	N / A	N / A
848.970	No Point Detected	N / A	N / A	N / A	N / A
869.040	No Point Detected	N / A	N / A	N / A	N / A
881.505	No Point Detected	N / A	N / A	N / A	N / A
893.970	No Point Detected	N / A	N / A	N / A	N / A

The Audio Analyzer condition :
12dB SINAD measurment level = 850mV.

10.4.3 VFO SCAN (ANT3)

Location	:	Tochigi No.2 Test Site
Date Tested	:	January 4, 2010 to January 5, 2010
Temperature	:	20 to 22 [degC]
Humidity	:	45 to 47 [%]
Engineer	:	Atsuyuki Morishima

Injected Frequency [MHz]	Detected Frequency [MHz]	12dB SINAD Reading Injected Frequency [dBm]	12dB SINAD Reading Detected Frequency	Rejection Level [dB]	Margin [dB]
824.040	No Point Detected	N / A	N / A	N / A	N / A
836.505	No Point Detected	N / A	N / A	N / A	N / A
848.970	No Point Detected	N / A	N / A	N / A	N / A
869.040	No Point Detected	N / A	N / A	N / A	N / A
881.505	No Point Detected	N / A	N / A	N / A	N / A
893.970	No Point Detected	N / A	N / A	N / A	N / A

The Audio Analyzer condition :
12dB SINAD measurment level = 850mV.

10.4.4 VFO SCAN (ANT4)

Location	:	Tochigi No.2 Test Site
Date Tested	:	January 4, 2010 to January 5, 2010
Temperature	:	20 to 22 [degC]
Humidity	:	45 to 47 [%]
Engineer	:	Atsuyuki Morishima

Injected Frequency [MHz]	Detected Frequency [MHz]	12dB SINAD Reading Injected Frequency [dBm]	12dB SINAD Reading Detected Frequency	Rejection Level [dB]	Margin [dB]
824.040	No Point Detected	N / A	N / A	N / A	N / A
836.505	No Point Detected	N / A	N / A	N / A	N / A
848.970	No Point Detected	N / A	N / A	N / A	N / A
869.040	No Point Detected	N / A	N / A	N / A	N / A
881.505	No Point Detected	N / A	N / A	N / A	N / A
893.970	No Point Detected	N / A	N / A	N / A	N / A

The Audio Analyzer condition :
12dB SINAD measurement level = 850mV.

10.4.5 VFO SCAN (RX ANT)

Location	:	Tochigi No.2 Test Site
Date Tested	:	January 4, 2010 to January 5, 2010
Temperature	:	20 to 22 [degC]
Humidity	:	45 to 47 [%]
Engineer	:	Atsuyuki Morishima

Injected Frequency [MHz]	Detected Frequency [MHz]	12dB SINAD Reading Injected Frequency [dBm]	12dB SINAD Reading Detected Frequency	Rejection Level [dB]	Margin [dB]
824.040	No Point Detected	N / A	N / A	N / A	N / A
836.505	No Point Detected	N / A	N / A	N / A	N / A
848.970	No Point Detected	N / A	N / A	N / A	N / A
869.040	No Point Detected	N / A	N / A	N / A	N / A
881.505	No Point Detected	N / A	N / A	N / A	N / A
893.970	No Point Detected	N / A	N / A	N / A	N / A

The Audio Analyzer condition :
12dB SINAD measurement level = 850mV.

10.5 Sample Calculations

10.5.1 Conducted disturbance at mains terminals

Example @ 1.5968MHz (AVG)

Emission Level	=	Meter Reading	27.6	dBuV
	+	Factor	10.4	dB
			=	38.0 dBuV
Margin	=	Limit	46.0	dBuV
	-	Emission Level	38.0	dBuV
			=	8.0 dB

Factor = LISN Factor + Cable Loss + Pad Loss

10.5.2 Radiated disturbance

Example @ 33.30MHz

Emission Level	=	Meter Reading	38.6	dBuV
	+	Factor	-6.7	dB/m
			=	31.9 dBuV/m
Margin	=	Limit	40.0	dBuV/m
	-	Emission Level	31.9	dBuV/m
			=	8.1 dB

Factor = Antenna Factor + Cable Loss + Amplifier Gain + Pad Loss

10.5.3 Conducted Power on Antenna Port

Example @ 33.50MHz

Output Power Level	=	Meter Reading		57.7	dBuV
	+	Factor		-15.3	dB
			=	42.4	dBuV
Margin	=	Limit (:2.0nW)		50.0	dBuV
	-	Output Power Level		42.4	dBuV
			=	7.6	dB

Factor = Cable Loss + Amplifier Gain + Pad Loss

10.5.4 38dB Rejection

Example @ N/A MHz

Rejection Level	=	12dB SINAD Reading at Injected Frequency		N/A	dBm
	-	12dB SINAD Reading at Detected Frequency		N/A	dBm
			=	N/A	dB
Margin	=	Rejection Level		N/A	dB
	-	Limit		38.0	dB
			=	N/A	dB

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 20, 09	May 31, 10
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 20, 09	May 31, 10
Coaxial cable(C2)	RG-5A/U(7.0 m)	2CL02	INTERTEK	May 20, 09	May 31, 10
Coaxial cable(C3)	5D-2W(0.2 m)	2CL03	INTERTEK	May 20, 09	May 31, 10
Coaxial cable(C4)	5D-2W(1.7 m)	2CL04	INTERTEK	May 20, 09	May 31, 10
Radiated disturbance					
Broad Band antenna	VULB9168	218	Schwarzbeck	Mar. 05, 09	Mar. 31, 10
Double ridged antenna	3115	9903-5699	EMCO	Apr. 28, 09	Apr. 30, 10
6dB Attenuator	CFA-01(NPJ-6)	None	TAMAGAWA	May 20, 09	May 31, 10
6dB Attenuator	8493C	18493	HEWLETT PACKARD	Apr. 22, 09	Apr. 30, 10
Amplifier	8449B	3008A01182	HEWLETT PACKARD	Apr. 22, 09	Apr. 30, 10
Step Attenuator	8494B	2805A14563	HEWLETT PACKARD	May 20, 09	May 31, 10
Amplifier	8447D	2727A05324	HEWLETT PACKARD	May 20, 09	May 31, 10
Spectrum analyzer	R3182 (Firmware Revision F04)	111100429	ADVANTEST	Jun. 10, 09	Jun. 30, 10
Site Attenuation				Aug. 18, 09	Aug. 31, 10
Conducted Power on Antenna Port					
3dB Attenuator	8493C	07818	HEWLETT PACKARD	Apr. 22, 09	Apr. 30, 10
10dB Attenuator	CFA-05NPJ-10	262856	TAMAGAWA	Nov. 06, 09	Nov. 30, 10
10dB Attenuator	6810.17.B	5061	SUHNER	Nov. 06, 09	Nov. 30, 10
Spectrum analyzer	8563E (Firmware Revision 971024)	3821A09565	HEWLETT PACKARD	Dec. 18, 08	Dec. 31, 09
Coaxial cable(C001a)	5D-2W(18.0m)	C001a	INTERTEK	Nov. 06,09	Nov. 30, 10
38dB Rejection					
Audio analyzer	8903B	2818A04372	HEWLETT PACKARD	Apr. 01, 09	Apr. 30, 10
Signal Generator	SMY01	71400014	ROHDE & SCHWARZ	Dec. 14, 09	Dec. 31, 10
Common (Radiated disturbance, Conducted Power on Antenna Port)					
Coaxial cable(R1)	5D-2W(10.0 m)	2R1001a	INTERTEK	May 20, 09	May 31, 10
Coaxial cable(R2)	RG-177/U(20.0 m)	2R1002	INTERTEK	May 20, 09	May 31, 10
Coaxial cable(R3)	RG-5A/U(1.3 m)	2R1003	INTERTEK	May 20, 09	May 31, 10
Coaxial cable(R4)	RG-5A/U(0.2 m)	2R1004	INTERTEK	May 20, 09	May 31, 10
Coaxial cable(R5)	5D-2W(0.7 m)	2R1005	INTERTEK	May 20, 09	May 31, 10
Coaxial cable(R6)	5D-2W(0.2 m)	2R1006	INTERTEK	May 20, 09	May 31, 10
Coaxial cable(R7)	5D-2W(1.7 m)	2R1007	INTERTEK	May 20, 09	May 31, 10
Coaxial cable(R8)	5D-2W(6.0 m)	2R1008a	INTERTEK	May 20, 09	May 31, 10
Coaxial cable(RG1)	SUCOFLEX(1.5 m)	290799/4	SUHNER	Apr. 22, 09	Apr. 30, 10
Coaxial cable(RG2)	SUCOFLEX(6.0 m)	290800/4	SUHNER	Apr. 22, 09	Apr. 30, 10

Instrument	Model No.	Serial No.	Manufacturer	Cal. date	Due date
Common					
ANT Termination	R40424000	None	Radall	N/A	N/A
ANT Termination	090-0510	None	Yuetsu	N/A	N/A
Test receiver	ESS (Firmware Version 1.07)	842886/013	ROHDE & SCHWARZ	Jan. 07, 09	Jan. 31, 10
RF Switch	ACX-150	None	INTERTEK	May 20, 09	May 31, 10
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.