



TEST REPORT

STANDARD : FCC Part15B Class B -Peripherals-

Applicant	Testing Laboratory
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Equipment Type	HF/50 MHz TRANSCEIVER
Trademark	YAESU
Model(s)	FTDX1200
Serial No.	ES04
Equipment Authorization	Certification (FCC ID : K6620581X50)
Test Result	Complied
Report Number	13020162JKA-001
Original Issue Date	April 03, 2013

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Approved by

Kazuo Gokita
[Manager]

Tested by

Koichi Wagatsuma



Responsible Party of Test Item (Product)

Responsible Party	:
Add.	:
Tel.	:
Fax.	:
Contact Person	:

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SECTION 1. GENERAL INFORMATION

Test Performed

EUT Received	March 14, 2013
Date of Test	From March 18, 2013 to March 20, 2013
Standard Applied	FCC Part15B Class B –peripherals-
Test methods	ANSI C63.4-2003
Deviation from Standard(s)	None

Qualifications of Testing Laboratory

Accreditation	Scope	Lab. Code	Remarks
NVLAP	EMC Testing	100290-0	USA
VLAC	EMC Testing	VLAC-008-1	JAPAN
BSMI	EMC Testing	SL2-IN-E-6008	TAIWAN
Filing			
VCCI	EMC Testing	A-0126	JAPAN
FCC	EMC Testing	Designation Number : JP0008	USA
IC	EMC Testing	2042K-1, 2042K-3, 2042Q-12	CANADA
CB-Scheme	EMC Testing	TL222	IECEE
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	HDMI	High-Definition Multimedia Interface

SECTION 2. SUMMARY OF TEST RESULTS

See Section9 for the detailed result.

Emission Tests

Standard Applied	FCC Part15B Class B –peripherals-	
Test Item	Minimum margin	Remarks
Conducted disturbance at mains terminals	23.2 dB (0.1500 MHz) [QP] PC mode(with USB Intreface Unit)	
Radiated disturbance	4.7 dB (66.59 MHz) PC mode(without USB Intreface Unit)	

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
A1	HF/50 MHz TRANSCEIVER	FTDX1200	ES04	YAESU MUSEN CO., LTD.	EUT
A2	Microphone	MH-31B8	YTS01	YAESU MUSEN CO., LTD.	ACCESSORY
A3	Speaker	SP-2000	2D060	YAESU MUSEN CO., LTD.	OPTION
A4	u-Tuning	MTU-160	6N004	YAESU MUSEN CO., LTD.	OPTION
A5	u-Tuning	MTU-80/40	6N004	YAESU MUSEN CO., LTD.	OPTION
A6	u-Tuning	MTU-30/20	6N004	YAESU MUSEN CO., LTD.	OPTION
A7	Remote Control Keypad	FH-2	YTS02	YAESU MUSEN CO., LTD.	OPTION
A8	Headphone	YH-77STA	YTS03	YAESU MUSEN CO., LTD.	OPTION
A9	Voice Memory Unit	DVS-6	YTS04	YAESU MUSEN CO., LTD.	OPTION
A10	FFT Unit	FFT-1	YTS05	YAESU MUSEN CO., LTD.	OPTION
A11	USB Interface Unit	SCU-17	ES15	YAESU MUSEN CO., LTD.	OPTION
Rated Power : DC 13.8V±10%, RX(No Signal): 1.8A, RX(Signal Present): 2.1A, TX(100W), 23.0A					
Supplied Power : DC 13.8V					
Condition of Equipment		Preproduction			
Type		Tabletop			
Suppression Devices		No Modifications by the laboratory were made to the device			

3.2 Overview of EUT

Frequency ranges	0.030 - 56.000MHz
Receiver Type	triple-conversion Super-heterodyne
Model of operation	A1A, A3E, J3E, F3E, F1B, G1B

3.3 Intermediate Frequency

40.455 MHz/ 455 kHz /30kHz (24 kHz for AM, FM, PACKET-FM)

3.4 Highest Frequency Generated / Used

Operating Frequency	Operating mode	Remarks
235.820 MHz	RX mode / TX mode	

3.5 Port(s)/Connector(s)

Port Name	Connector Type	Connector Pin	Remarks
HF TRANSCEIVER			
ANT 1	MR-S (Coaxial)	2 pin	
ANT 2/RX	MR-S (Coaxial)	2 pin	
DC IN	VL Connector	4 pin	
μ-TUNE TO / μ-TUNE FROM	RCA	2 pin	
ROT	Mini-DIN	10 pin	
LINEAR	Mini-DIN	10 pin	
TUNER	Mini-DIN	8 pin	
RTTY / DATA	Mini-DIN	6 pin	
PTT / REC	RCA	2 pin	
REM / EXT SPKR	3.5φ mono	2 pin	
KEY	6φ stereo	3 pin	
μ-TUNE	Mini-DIN	10 pin	
CAT	D-sub	9 pin	
MIC	FM214-8SMPT-NI	8 pin	
Speaker			
PHONES	6φ stereo	3 pin	
INPUT-1	RCA	2 pin	
INPUT-2	RCA	2 pin	
LINE OUT	RCA	2 pin	
u-Tuning			
RF IN	RCA	2 pin	
RF OUT	RCA	2 pin	
CNTL-IN	Mini-DIN	10 pin	
CNTL-OUT	Mini-DIN	10 pin	
USB Interface Unit			
USB	B type	4 pin	
CAT / RS-232C	D-sub	9 pin	
PTT FSK	3.5φ stereo	3 pin	
DATA	Mini-DIN	6 pin	
AUDIO	3.5φ stereo	3 pin	

SECTION 4. SUPPORT EQUIPMENT

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

Symbol	Item	Model No.	Serial No.	Manufacturer	FCC ID
B	Power Supply	FP-1030A	1208137783	YAESU MUSEN CO., LTD.	N/A
C	Terminator	CT-03	4B336	TME	N/A
D	Terminator	UT-03NP	None	TME	N/A
E	Computer	MTC2	4BLZS1X	DELL INC.	Doc
F	LCD	E151FPb	CN-04W569-46633-363-1DLT	DELL INC.	Doc
G	Keyboard	SK-8110	CN-07N247-71616-44Q-090P	DELL INC.	Doc
H	Mouse	M071KC	412121734	DELL INC.	Doc
I	Printer	C8154A	TH571320G6	Hewlet Packard	Doc
J	AC/DC Adapter	0957-2142	E10588013501L	Hewlet Packard	N/A
Supplied Power:					
B , E, F, J	AC120 V, 60 Hz				
I	DC 31V				

SECTION 5. USED CABLE(S)

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

No.	Name	Length (m)	Shield	Metal Connector	Ferrite Core
1	Key cable	1.10	Yes	Yes	
2	PHONES cable	1.80	Yes	Yes	
3	MIC cable	0.50	Yes	Yes	
4	Speaker cable	1.00	Yes	Yes	
5	GND cable	2.00	No	No	
6	μ-TUNE (TO) cable	1.20	Yes	Yes	
7	μ-TUNE (FROM) cable	1.20	Yes	Yes	
8	ROTATOR cable	1.60	Yes	Yes	
9	LINEAR cable	2.00	Yes	Yes	
10	RTTY / DATA cable	1.60	Yes	Yes	
11	PTT cable	1.50	Yes	Yes	
12	REC cable	1.50	Yes	Yes	
13	REM cable	1.00	Yes	Yes	
14	EXT SPKR cable	1.10	Yes	Yes	
15	KEY cable	1.10	Yes	Yes	
16	μ-TUNE cable	1.40	Yes	Yes	
17	CAT cable	1.00	Yes	Yes	
18	USB cable	1.80	Yes	Yes	
19	PTT FSK cable	1.40	Yes	Yes	
20	AUDIO cable	1.60	Yes	Yes	

No.	Name	Length (m)	Shield	Metal Connector	Ferrite Core
21	μ-TUNE cable	1.20	Yes	Yes	
22	μ-TUNE cable	1.20	Yes	Yes	
23	μ-TUNE cable	1.20	Yes	Yes	
24	μ-TUNE cable	1.20	Yes	Yes	
25	Speaker(INPUT) cable	1.10	No	Yes	
26	Speaker(LINE OUT) cable	1.10	No	Yes	
27	Video cable	1.60	Yes	Yes	Fixed x 1
28	Keyboard cable	2.00	Yes	Yes	
29	Mouse cable	1.80	Yes	Yes	
30	Centronics cable	5.00	Yes	Yes	
31	Power cable for FTDX1200 (DC)	2.00	No	No	
32	Power cable for Printer(DC)	1.80	No	No	
33	Power cable for Power Supply	1.70	No	No	
34	Power cable for Computer	2.50	No	No	
35	Power cable for LCD	2.20	No	No	
36	Power cable for Printer(AC)	3.00	No	No	

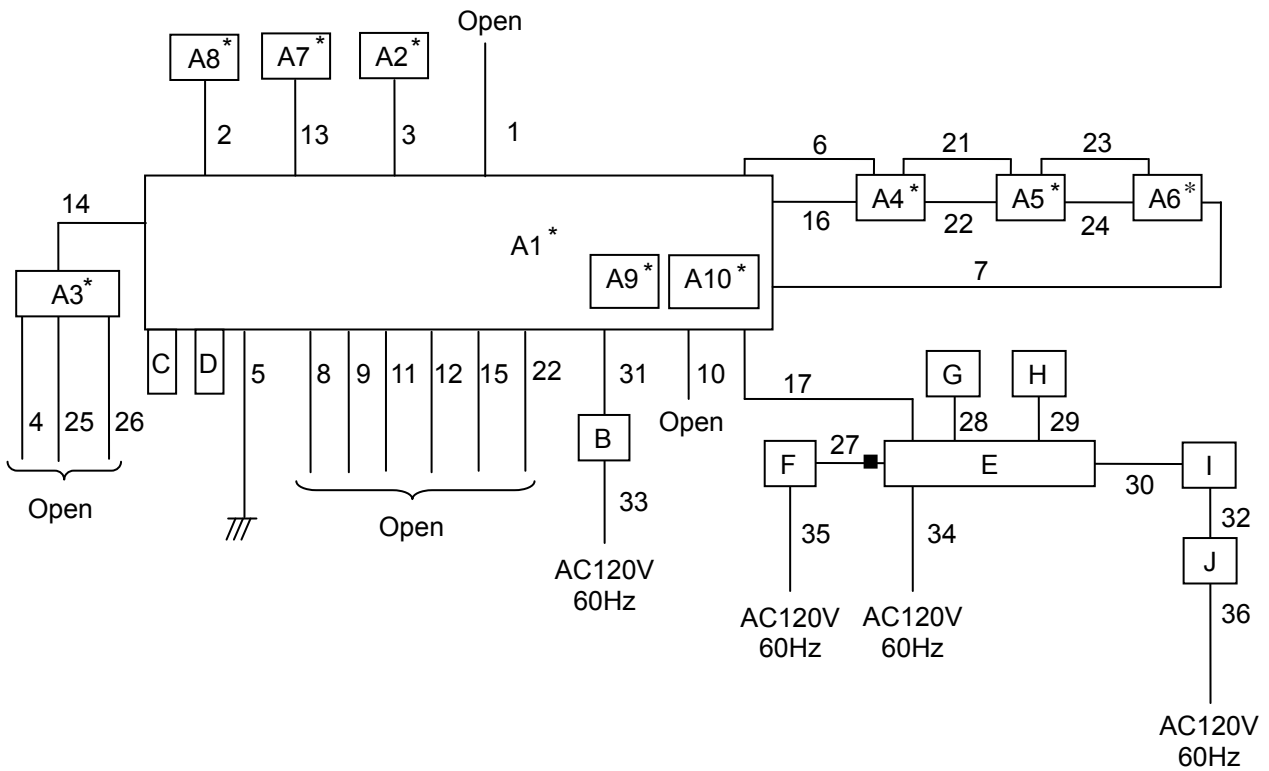
Note : 1. No.27 cable is supplied together with LCD(F) .
 2. No.31 cable is supplied together with EUT by the applicant.

SECTION 6. TEST CONFIGURATION

6.1 Emission Tests

6.1.1 PC mode (without USB Interface unit)

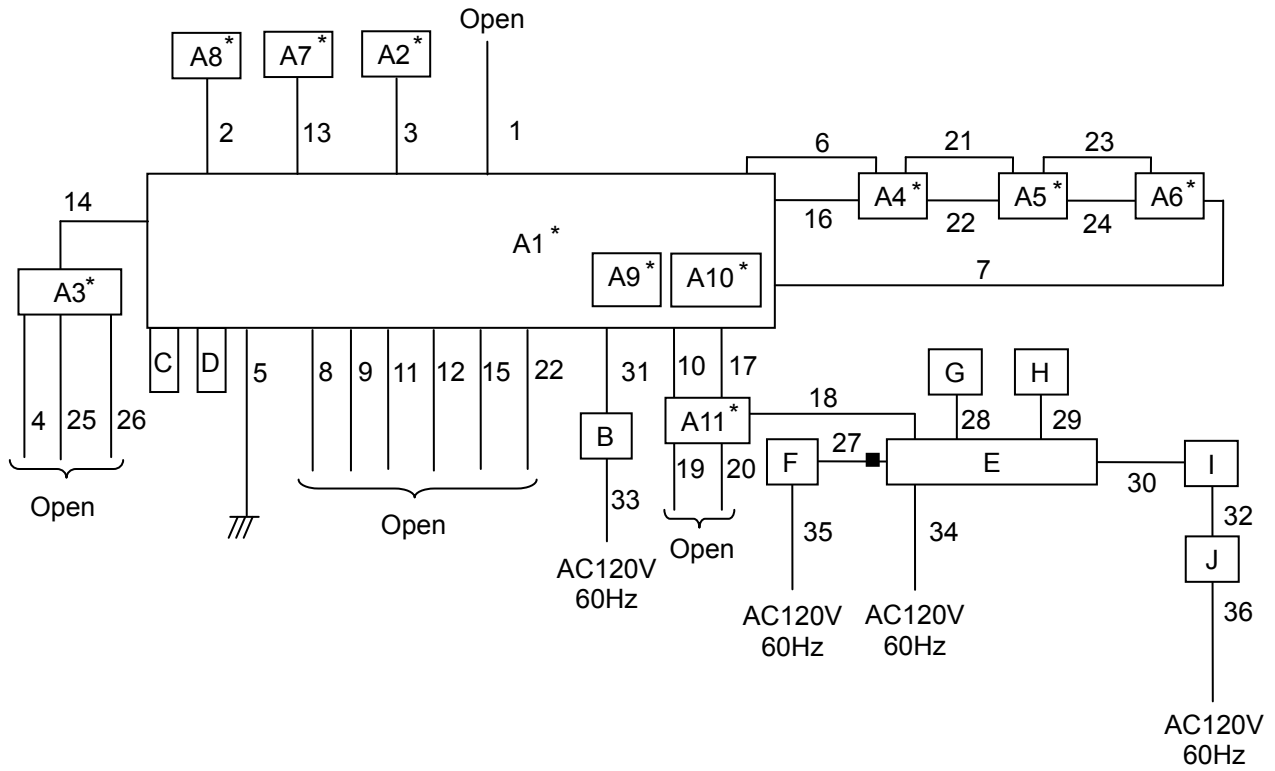
* : EUT
 ■ : Ferrite core



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

6.1.2 PC mode (with USB Interface unit)

□ : EUT
 ■ : Ferrite core

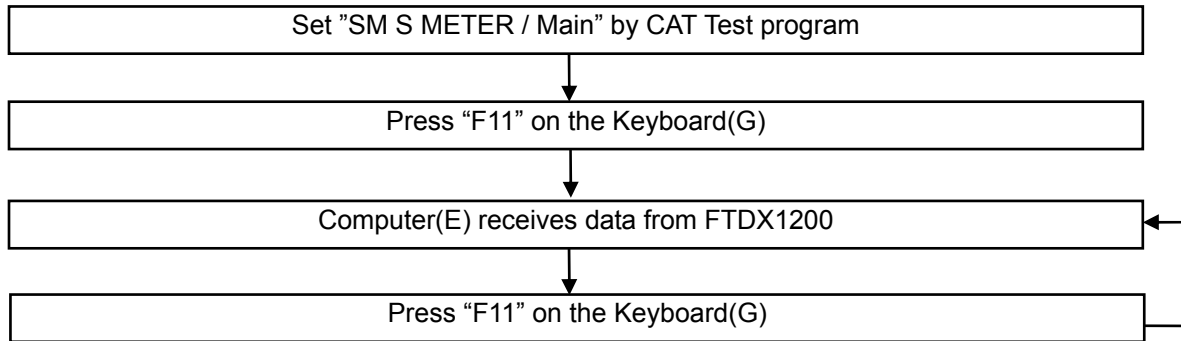


The symbols and numbers assigned to the equipments and cables on this diagram correspond to the ones in Sections 3 to 5.

SECTION 7. OPERATING CONDITION

The test was carried out under the following mode.

7.1 PC mode



SECTION 8. UNCERTAINTY

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.

8.1 Emission tests

Radiated disturbance at 3m	$U_{lab} [k = 2]$	U_{cispr}
30 MHz – 1000 MHz	+/- 4.48 dB	5.19 dB
Above 1 GHz CISPR22	+/- 4.30 dB	
ANSI 63.4	+/- 4.84 dB	
Radiated disturbance at 10m		
30 MHz – 1000 MHz	+/- 5.00 dB	5.06 dB
Above 1 GHz	+/- 5.23 dB	
Radiated disturbance at 30m		
	N/A	5.02 dB
Conducted disturbance at mains terminals		
9 kHz – 150 kHz	+/- 3.25 dB	3.97 dB
150 kHz – 30 MHz	+/- 2.86 dB	3.60 dB
Conducted disturbance at telecommunication ports (ISN)		
150 kHz – 30 MHz	+/- 4.92 dB	Nil
Conducted disturbance at telecommunication ports (Capacitive Voltage Probe)		
150 kHz – 30 MHz	+/- 3.85 dB	Nil
Conducted disturbance at telecommunication ports (Current Probe)		
150 kHz – 30 MHz	+/- 3.03 dB	Nil
Conducted disturbance at terminals		
150 kHz – 30 MHz	+/- 2.94 dB	Nil
Disturbance power		
30 MHz – 300 MHz	+/- 3.61 dB	4.45 dB

The above expanded instrumentation uncertainty, U_{lab} , is estimated in accordance with CISPR 16-4-2.

SECTION 9. EVALUATION OF TEST RESULTS

9.1 Emission tests

9.1.1 Conducted disturbance at mains terminals

Location	Kashima No.3 Test Site
Test Engineer	Koichi Wagatsuma

Frequency Range of Measurements

Required Measurement Frequency Range	Measured Frequency Range
0.15 – 30 MHz	0.15 – 30 MHz

Test Procedure

Item	Document number
Conducted disturbance at mains terminals	RJP-EM001

Setting for the Measuring instruments

Instrument	Detector	Resolution Bandwidth	Video Bandwidth
Receiver	Quasi Peak	10 kHz	N/A
	Average	10 kHz	N/A

< Measurement data correction >

* Conducted disturbance at mains terminals

Emission Level [dBμV] = Meter Reading [dBμV] + Factor [dB]

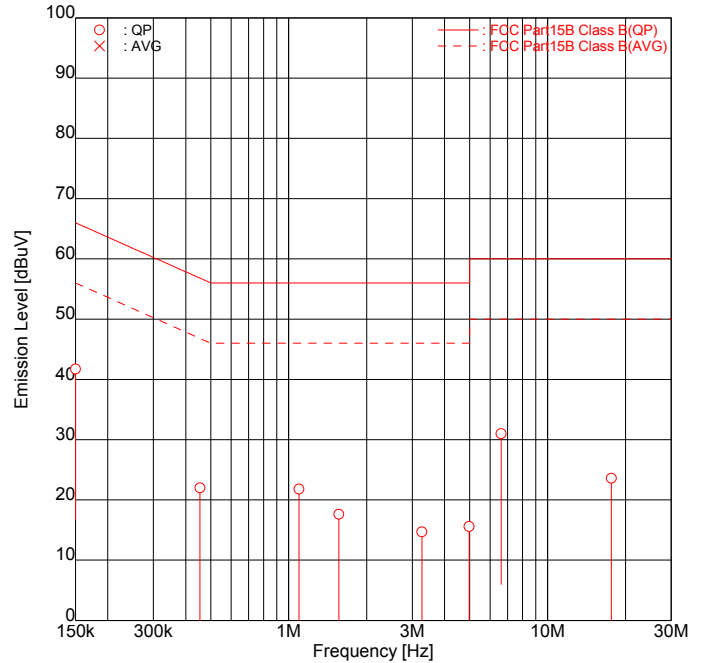
Margin [dB] = Limit [dBμV] - Emission Level [dBμV]

* Factor = LISN Factor + Cable Loss + ATT

Result of Conducted disturbance at mains terminals
9.1.1.1 PC mode (without USB Interface unit)

Intertek Japan K.K.
Kashima No.3 Test Site
 Conducted Voltages on Mains Port

APPLICANT : YAESU MUSEN CO.,LTD.
 EUT NAME : HF/50MHz TRANSCEIVER
 MODEL NO. : FTDX1200
 SERIAL NO. : ES04
 TEST MODE : PC mode
 POWER SOURCE : DC 13.8V
 DATE TESTED : Mar 20 2013
 FILE NO. : -
 REGULATION : FCC Part15B Class B
 TEST METHOD : ANSI C63.4-2003
 TEMPERATURE : 18.0 [degC]
 HUMIDITY : 60.0 [%]
 NOTE : Power cable for Power Supply(FP-1030A)
 without USB interface unit



ENGINEER : Koichi Wagatsuma

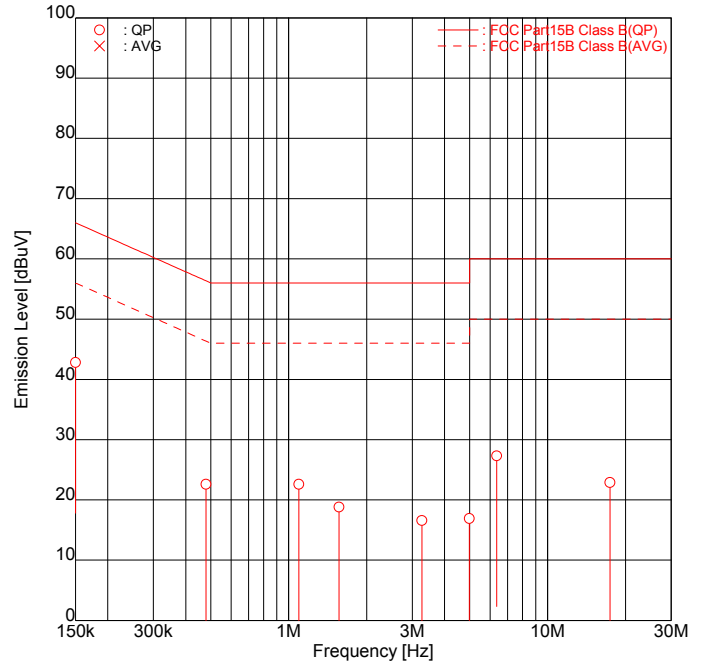
FREQUENCY [No]	MODE [MHz]		READING [dBuV]		FACTOR [dB]		EMISSION [dBuV]		LIMIT [dBuV]	MARGIN [dB]	
			Line1	Line2	Line1	Line2	Line1	Line2		Line1	Line2
1	0.1500	QP	30.0	<u>31.5</u>	10.2	10.2	40.2	<u>41.7</u>	66.0	25.8	<u>24.3</u>
2	0.4544	QP	<u>11.8</u>	<u>11.7</u>	10.2	10.2	<u>22.0</u>	<u>21.9</u>	56.8	<u>34.8</u>	<u>34.9</u>
3	1.0967	QP	<u>11.5</u>	11.5	10.3	10.3	<u>21.8</u>	21.8	56.0	<u>34.2</u>	34.2
4	1.5609	QP	<u>7.2</u>	7.0	10.4	10.4	<u>17.6</u>	17.4	56.0	<u>38.4</u>	38.6
5	3.2681	QP	4.1	4.3	10.4	10.4	14.5	14.7	56.0	41.5	41.3
6	4.9752	QP	3.5	5.1	10.5	10.5	14.0	15.6	56.0	42.0	40.4
7	6.6143	QP	<u>20.4</u>	20.4	10.6	10.6	<u>31.0</u>	31.0	60.0	<u>29.0</u>	29.0
8	17.6238	QP	10.5	<u>12.7</u>	10.9	10.9	21.4	<u>23.6</u>	60.0	38.6	<u>36.4</u>

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

9.1.1.2 PC mode (with USB Interface unit)

Intertek Japan K.K.
 Kashima No.3 Test Site
 Conducted Voltages on Mains Port

APPLICANT : YAESU MUSEN CO.,LTD.
 EUT NAME : HF/50MHz TRANSCEIVER
 MODEL NO. : FTDX1200
 SERIAL NO. : ES04
 TEST MODE : PC mode
 POWER SOURCE : DC 13.8V
 DATE TESTED : Mar 20 2013
 FILE NO. : -
 REGULATION : FCC Part15B Class B
 TEST METHOD : ANSI C63.4-2003
 TEMPERATURE : 18.0 [degC]
 HUMIDITY : 60.0 [%]
 NOTE : Power cable for Power Supply(FP-1030A)
 with USB Interface unit



ENGINEER : Koichi Wagatsuma

FREQUENCY [No]	MODE [MHz]		READING [dBuV]		FACTOR [dB]		EMISSION [dBuV]		LIMIT [dBuV]	MARGIN [dB]	
			Line1	Line2	Line1	Line2	Line1	Line2		Line1	Line2
1	0.1500	QP	32.3	<u>32.6</u>	10.2	10.2	42.5	<u>42.8</u>	66.0	23.5	<u>23.2</u>
2	0.4787	QP	<u>12.4</u>	12.4	10.2	10.2	<u>22.6</u>	22.6	56.4	<u>33.8</u>	33.8
3	1.0943	QP	<u>12.3</u>	12.1	10.3	10.3	<u>22.6</u>	22.4	56.0	<u>33.4</u>	33.6
4	1.5647	QP	<u>8.4</u>	8.0	10.4	10.4	<u>18.8</u>	18.4	56.0	<u>37.2</u>	37.6
5	3.2666	QP	6.2	4.8	10.4	10.4	16.6	15.2	56.0	39.4	40.8
6	4.9879	QP	4.6	6.4	10.5	10.5	15.1	16.9	56.0	40.9	39.1
7	6.3603	QP	16.3	<u>16.7</u>	10.6	10.6	26.9	<u>27.3</u>	60.0	33.1	<u>32.7</u>
8	17.4175	QP	10.0	<u>12.0</u>	10.9	10.9	20.9	<u>22.9</u>	60.0	39.1	<u>37.1</u>

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

9.1.2 Field Strength Emission and Spurious Emission (Radiated disturbance)

Location	Kashima No.12 Test Site
Test Engineer	Koichi Wagatsuma

Frequency Range of Measurements

Field Strength Emission

Operating mode	Required Frequency Range	Measured Frequency Range
PC mode (without USB Interface unit) PC mode (with USB Interface unit)	30 – 2000 MHz	30 – 2000 MHz

Test Procedure

Item	Document number
Radiated disturbance	RJP-EM003

Setting for the Measuring instruments

Frequency [MHz]	Instrument	Detector	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

< Measurement data correction >

* 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)

Specification of Radiated disturbance

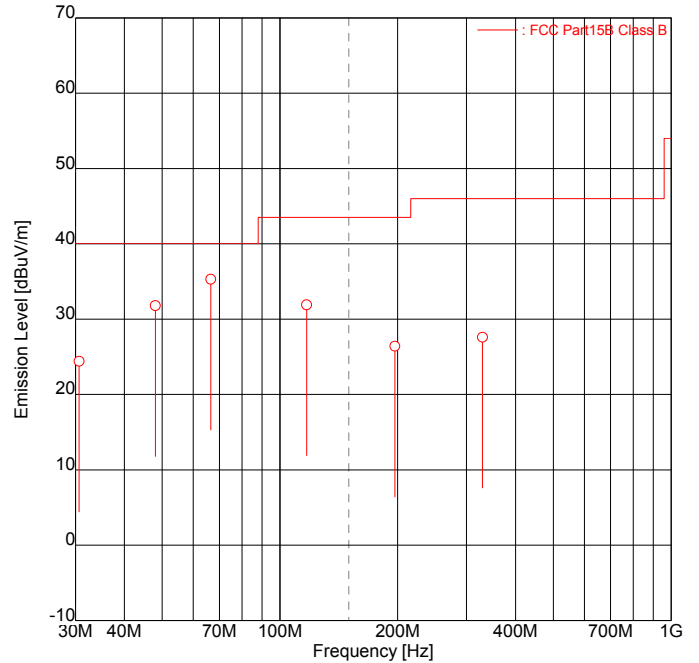
Operating Condition	Frequency Range	Measurement distance	Antenna height
PC mode (without USB Interface unit) PC mode (with USB Interface unit)	30 – 2000 MHz	3.0 m	Scanned 1 to 4 m

Result of Radiated disturbances

**9.1.2.1 PC mode (without USB Interface unit)
 30 - 1000MHz**

Intertek Japan K.K.
Kashima No.12 Test Site
 Radiated Electric Field

APPLICANT : YAESU MUSEN CO., LTD.
 EUT NAME : HF/50 MHz TRANSCEIVER
 MODEL NO. : FTDX1200
 SERIAL NO. : ES04
 TEST MODE : PC mode
 POWER SOURCE : DC 13.8V
 DATE TESTED : Mar 18 2013
 FILE NO. : -
 REGULATION : FCC Part15B Class B
 TEST METHOD : ANSI C63.4-2003
 DISTANCE : 3.00 [m]
 TEMPERATURE : 18.0 [degC]
 HUMIDITY : 42.0 [%]
 NOTE : without USB Interface Unit



ENGINEER : Koichi Wagatsuma

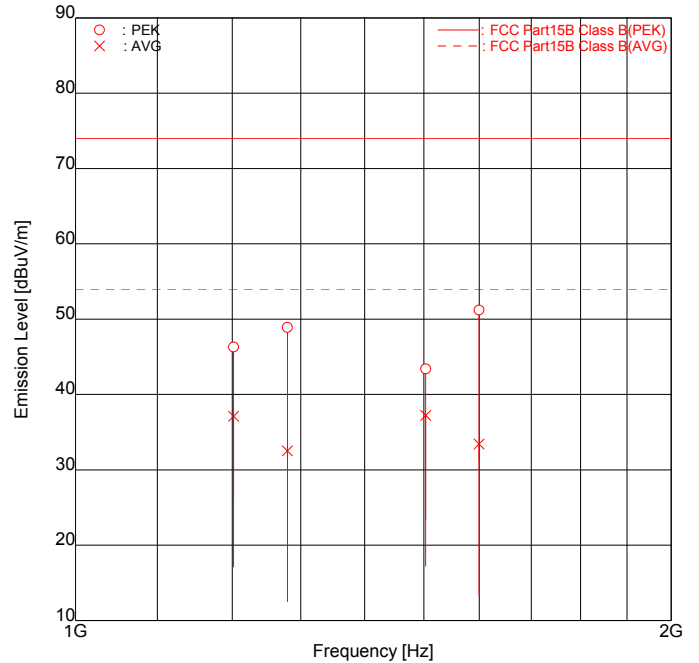
FREQUENCY [No]	FREQUENCY [MHz]	READING [dBuV]		FACTOR [dB]		EMISSION [dBuV/m]		LIMIT [dBuV/m]	MARGIN [dB]	
		Hori	Vert	Hori	Vert	Hori	Vert		Hori	Vert
1	30.65	-	<u>22.0</u>	2.4	2.4	-	<u>24.4</u>	40.0	-	<u>15.6</u>
2	48.01	-	<u>31.4</u>	0.4	0.4	-	<u>31.8</u>	40.0	-	<u>8.2</u>
3	66.59	<u>40.5</u>	<u>36.7</u>	-5.2	-5.2	<u>35.3</u>	<u>31.5</u>	40.0	<u>4.7</u>	<u>8.5</u>
4	117.00	-	<u>34.1</u>	-2.2	-2.2	-	<u>31.9</u>	43.5	-	<u>11.6</u>
5	196.63	-	<u>29.2</u>	-2.8	-2.8	-	<u>26.4</u>	43.5	-	<u>17.1</u>
6	329.35	<u>25.0</u>	-	2.6	2.6	<u>27.6</u>	-	46.0	<u>18.4</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)

1000 - 2000 MHz

Intertek Japan K.K.
Kashima No.12 Test Site
 Radiated Electric Field

APPLICANT : YAESU MUSEN CO., LTD.
 EUT NAME : HF/50 MHz TRANSCEIVER
 MODEL NO. : FTDX1200
 SERIAL NO. : ES04
 TEST MODE : PC mode
 POWER SOURCE : DC 13.8V
 DATE TESTED : Mar 19 2013
 FILE NO. : -
 REGULATION : FCC Part15B Class B
 TEST METHOD : ANSI C63.4-2003
 DISTANCE : 3.00 [m]
 TEMPERATURE : 18.0 [degC]
 HUMIDITY : 59.0 [%]
 NOTE : without USB Interface Unit



ENGINEER : Koichi Wagatsuma

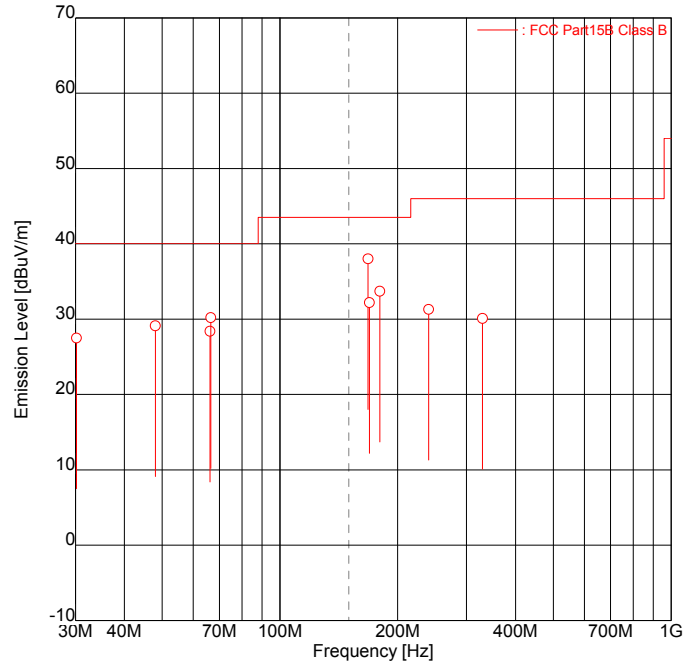
FREQUENCY [No]	MODE [MHz]		READING [dBuV]		FACTOR [dB/m]		EMISSION [dBuV/m]		LIMIT [dBuV/m]		MARGIN [dB]	
			Hori	Vert	Hori	Vert	Hori	Vert	Hori	Vert	Hori	Vert
1	1202.15	PEK	-	51.2	-4.9	-4.9	-	46.3	74.0	-	-	27.7
2	1202.15	AVG	-	<u>42.0</u>	-4.9	-4.9	-	<u>37.1</u>	54.0	-	-	<u>16.9</u>
3	1279.80	PEK	<u>53.7</u>	<u>53.1</u>	-4.8	-4.8	<u>48.9</u>	48.3	74.0	<u>25.1</u>	-	<u>25.7</u>
4	1279.80	AVG	<u>37.3</u>	36.5	-4.8	-4.8	<u>32.5</u>	31.7	54.0	<u>21.5</u>	-	22.3
5	1503.07	PEK	-	47.4	-4.0	-4.0	-	43.4	74.0	-	-	30.6
6	1503.07	AVG	-	<u>41.2</u>	-4.0	-4.0	-	<u>37.2</u>	54.0	-	-	<u>16.8</u>
7	1599.50	PEK	<u>54.9</u>	-	-3.7	-3.7	<u>51.2</u>	-	74.0	<u>22.8</u>	-	-
8	1599.50	AVG	<u>37.1</u>	-	-3.7	-3.7	<u>33.4</u>	-	54.0	<u>20.6</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)

**9.1.2.2 PC mode (with USB Interface unit)
 30 - 1000MHz**

Intertek Japan K.K.
Kashima No.12 Test Site
 Radiated Electric Field

APPLICANT : YAESU MUSEN CO., LTD.
 EUT NAME : HF/50 MHz TRANSCEIVER
 MODEL NO. : FTDX1200
 SERIAL NO. : ES04
 TEST MODE : PC mode
 POWER SOURCE : DC 13.8V
 DATE TESTED : Mar 18 2013
 FILE NO. : -
 REGULATION : FCC Part15B Class B
 TEST METHOD : ANSI C63.4-2003
 DISTANCE : 3.00 [m]
 TEMPERATURE : 18.0 [degC]
 HUMIDITY : 42.0 [%]
 NOTE : with USB Interface Unit



ENGINEER : Koichi Wagatsuma

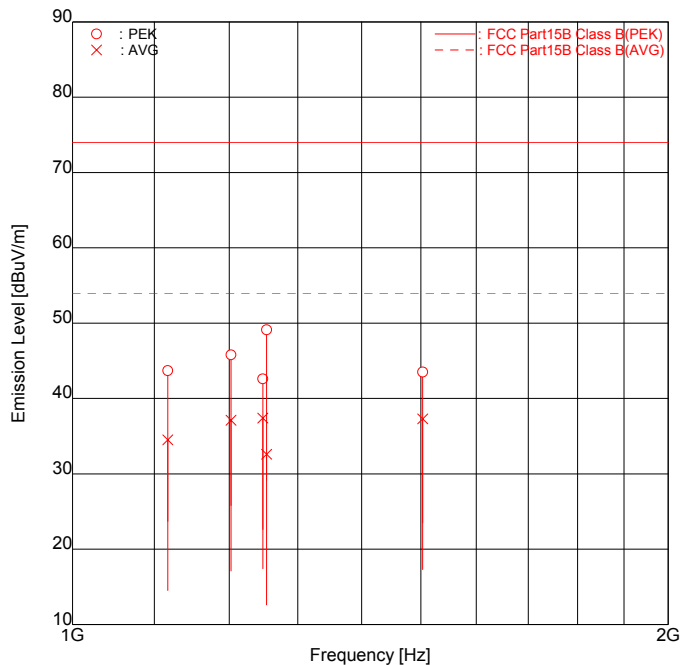
FREQUENCY [No]	FREQUENCY [MHz]	READING [dBuV]		FACTOR [dB]		EMISSION [dBuV/m]		LIMIT [dBuV/m]	MARGIN [dB]	
		Hori	Vert	Hori	Vert	Hori	Vert		Hori	Vert
1	30.20	-	25.0	2.5	2.5	-	27.5	40.0	-	12.5
2	48.01	-	<u>28.7</u>	0.4	0.4	-	<u>29.1</u>	40.0	-	<u>10.9</u>
3	66.21	<u>33.5</u>	-	-5.1	-5.1	<u>28.4</u>	-	40.0	<u>11.6</u>	-
4	66.59	-	<u>35.4</u>	-5.2	-5.2	-	<u>30.2</u>	40.0	-	<u>9.8</u>
5	168.02	-	<u>42.0</u>	-4.0	-4.0	-	<u>38.0</u>	43.5	-	<u>5.5</u>
6	169.40	-	<u>36.3</u>	-4.1	-4.1	-	<u>32.2</u>	43.5	-	<u>11.3</u>
7	180.02	-	<u>37.0</u>	-3.3	-3.3	-	<u>33.7</u>	43.5	-	<u>9.8</u>
8	240.10	-	<u>31.9</u>	-0.6	-0.6	-	<u>31.3</u>	46.0	-	<u>14.7</u>
9	329.35	27.5	-	2.6	2.6	30.1	-	46.0	15.9	-

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)

1000 - 2000 MHz

Intertek Japan K.K.
 Kashima No.12 Test Site
 Radiated Electric Field

APPLICANT : YAESU MUSEN CO., LTD.
 EUT NAME : HF/50 MHz TRANSCEIVER
 MODEL NO. : FTDX1200
 SERIAL NO. : ES04
 TEST MODE : PC mode
 POWER SOURCE : DC 13.8V
 DATE TESTED : Mar 19 2013
 FILE NO. : -
 REGULATION : FCC Part15B Class B
 TEST METHOD : ANSI C63.4-2003
 DISTANCE : 3.00 [m]
 TEMPERATURE : 18.0 [degC]
 HUMIDITY : 59.0 [%]
 NOTE : with USB Interface Unit



ENGINEER : Koichi Wagatsuma

FREQUENCY [No]	MODE [MHz]		READING [dBuV]		FACTOR [dB/m]		EMISSION [dBuV/m]		LIMIT [dBuV/m]	MARGIN [dB]	
			Hori	Vert	Hori	Vert	Hori	Vert		Hori	Vert
1	1117.39	PEK	48.9	-	-5.2	-5.2	43.7	-	74.0	30.3	-
2	1117.39	AVG	<u>39.7</u>	-	-5.2	-5.2	<u>34.5</u>	-	54.0	<u>19.5</u>	-
3	1202.69	PEK	-	50.7	-4.9	-4.9	-	45.8	74.0	-	28.2
4	1202.69	AVG	-	<u>42.0</u>	-4.9	-4.9	-	<u>37.1</u>	54.0	-	<u>16.9</u>
5	1248.06	PEK	-	47.5	-4.9	-4.9	-	42.6	74.0	-	31.4
6	1248.06	AVG	-	<u>42.3</u>	-4.9	-4.9	-	<u>37.4</u>	54.0	-	<u>16.6</u>
7	1253.40	PEK	<u>53.9</u>	53.4	-4.8	-4.8	<u>49.1</u>	48.6	74.0	<u>24.9</u>	25.4
8	1253.40	AVG	<u>37.4</u>	37.4	-4.8	-4.8	<u>32.6</u>	32.6	54.0	<u>21.4</u>	21.4
9	1503.05	PEK	-	47.5	-4.0	-4.0	-	43.5	74.0	-	30.5
10	1503.05	AVG	-	<u>41.3</u>	-4.0	-4.0	-	<u>37.3</u>	54.0	-	<u>16.7</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)

SECTION 10. LIST OF MEASURING INSTRUMENTS

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

10.1 Emission tests

Instrument	Model No.	Serial No.	Manufacturer	Cal. Interval	Effective period
Conducted disturbance at mains terminals					
LISN(EUT)	ESH2-Z5	890484/001	Rohde & Schwarz	1 Y	Nov. 30, 2013
LISN(Peripheral)	ESH2-Z5	882395/022	Rohde & Schwarz	1 Y	Oct 31, 2013
10dB LISN Pad	CFA-01	KSR00240	TME	1 Y	Nov. 30, 2013
10dB LISN Pad	CFA-01	KSR00249	TME	1 Y	Oct 31, 2013
50Ω Termination	CT-01	A001CON50	TME	1 Y	Oct. 31, 2013
Coaxial Cable	RG-5A/U(7.2m)	C1	Intertek Japan	1 Y	Mar. 31, 2013
Coaxial Cable	RG-5A/U(4.0m)	C2	Intertek Japan	1 Y	Mar. 31, 2013
Coaxial Cable	RG-5A/U(1.1m)	R11	Intertek Japan	1 Y	Mar. 31, 2013
RF Switch	ACX-150	None	Intertek Japan	1 Y	Mar. 31, 2013
Radiated disturbance					
Antenna	Bi-cog LPB-2513/A	1103	ARA	1 Y	Oct. 31, 2013
Amplifier	ZX60-3018G	005	Intertek Japan	1 Y	Jan. 31, 2014
6dB Attenuator	UFA-01	None	TME	1 Y	Jan. 31, 2014
Coaxial cable(R1)	RG-5A/U (14.0m)	None	Intertek Japan	1 Y	Jan. 31, 2014
Coaxial cable(R3)	RG-5A/U (7.0m)	None	Intertek Japan	1 Y	Jan. 31, 2014
Coaxial cable(R5)	RG-5A/U (4.0m)	None	Intertek Japan	1 Y	Jan. 31, 2014
Coaxial cable(R7)	5D-2W (0.7m)	None	Intertek Japan	1 Y	Jan. 31, 2014
Coaxial cable(R10)	5D-2W (1.2m)	None	Intertek Japan	1 Y	Jan. 31, 2014
Double Ridged Antenna	3115	5044	EMCO	1 Y	Jul. 31, 2013
3dB Attenuator	6803.17.B	None	SUHNER	1 Y	Oct. 31, 2013
Coaxial cable(R14)	R286401343(1.0m)	03 23 104	RADIALL	1 Y	Oct. 31, 2013
Coaxial cable(R15)	R286401344(8.0m)	03 23 72	RADIALL	1 Y	Oct. 31, 2013
Amplifier	TPA0118-30	0402	TOYO	1 Y	Oct. 31, 2013
RF Switch	ACX-150-1	-	Intertek Japan	1 Y	Jan. 31, 2014
Spectrum Analyzer	N9030A(Rev.A.08.54)	US51350220	Agilent	1 Y	Feb. 28, 2014
Site Attenuation	-	-	-	1 Y	Feb. 28, 2014
Common					
Test receiver	ESS (Firmware Version 1.07)	842886/011	Rohde & Schwarz	1 Y	Aug. 31, 2013
Test receiver	ESS (Firmware Version 1.07)	847151/012	Rohde & Schwarz	1 Y	Mar. 31, 2013
Testing Software	emiT (Version 3,0,0,0)				

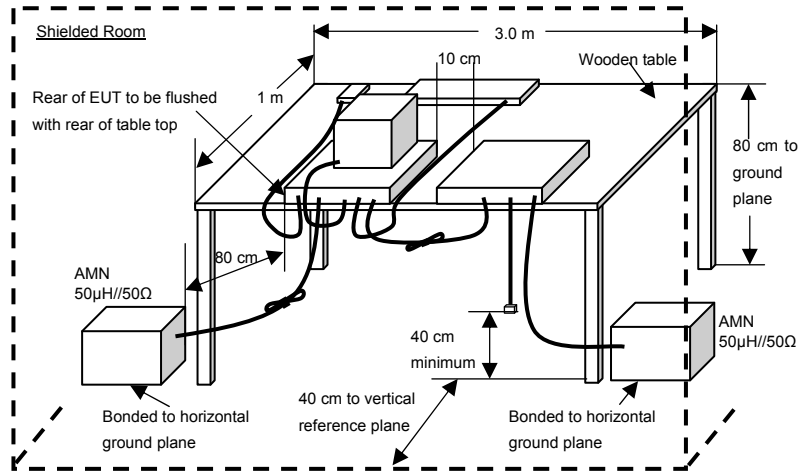
ANNEX

TEST PROCEDURE(S)

Test was carried out under the following conditions.

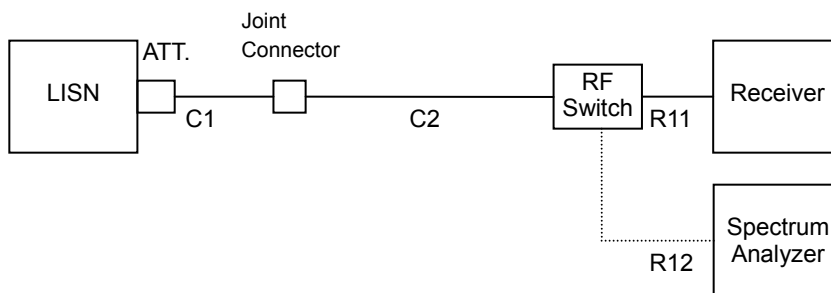
Conducted disturbance at mains terminals

Test setup as per standard



* Reference Ground plane : greater than 2 x 2m

Diagram of the measuring instruments



[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

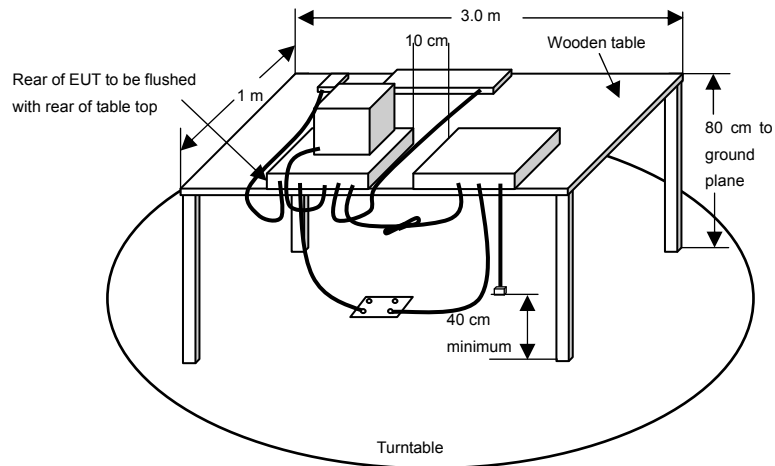
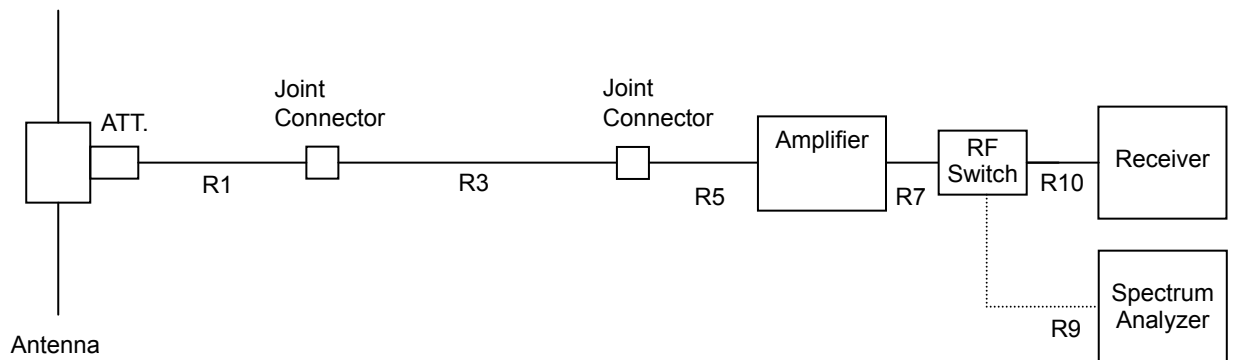
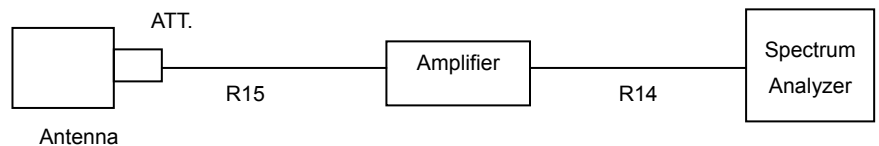


Diagram of the measuring instruments (30-1000MHz)



Above 1GHz



[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.