

DATA OF CONDUCTED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.3 Shielded Room
Date : 2011/06/22

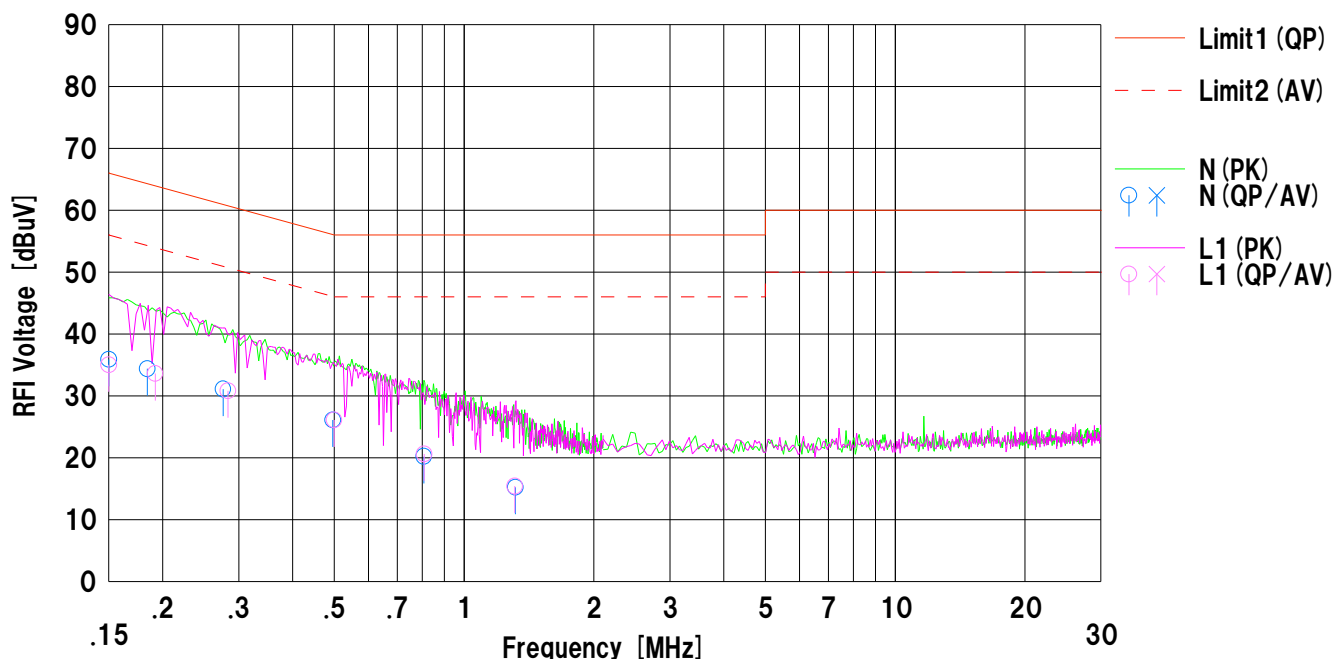
Company : Sony Corporation
Kind of EUT : TransferJet Module
Model No. : CXN5100
Serial No. : 4

Mode : Transmitting
Report No. : 31JE0261-SH-01-A-R1
Power : DC 3.3V
Temp./Humi. : 26deg.C / 61%RH

Remarks : ANT:A (2.0mm) , Cable:A (20mm)

Limit1 : FCC 15C (15.207) ClassB QP
Limit2 : FCC 15C (15.207) ClassB AV

Engineer : Minoru Nakatake



No.	Freq. [MHz]	Reading		C.Fac [dB]	Results		Limit		Margin		Phase	Comment
		<QP> [dBuV]	<AV> [dBuV]		<QP> [dBuV]	<AV> [dBuV]	<QP> [dBuV]	<AV> [dBuV]	<QP> [dB]	<AV> [dB]		
1	0.15000	22.8	---	13.1	35.9	---	66.0	56.0	30.1	---	N	
2	0.18428	21.3	---	13.1	34.4	---	64.2	54.2	29.8	---	N	
3	0.27589	18.0	---	13.1	31.1	---	60.9	50.9	29.8	---	N	
4	0.49609	13.0	---	13.1	26.1	---	56.0	46.0	29.9	---	N	
5	0.80650	7.1	---	13.1	20.2	---	56.0	46.0	35.8	---	N	
6	1.31571	2.1	---	13.1	15.2	---	56.0	46.0	40.8	---	N	
7	0.15000	21.9	---	13.1	35.0	---	66.0	56.0	31.0	---	L1	
8	0.19207	20.5	---	13.1	33.6	---	63.9	53.9	30.3	---	L1	
9	0.28323	17.7	---	13.1	30.8	---	60.7	50.7	29.9	---	L1	
10	0.49947	13.0	---	13.1	26.1	---	56.0	46.0	29.9	---	L1	
11	0.80830	7.5	---	13.1	20.6	---	56.0	46.0	35.4	---	L1	
12	1.31109	2.3	---	13.1	15.4	---	56.0	46.0	40.6	---	L1	

Bandwidth (Regulation: FCC 15.503(d) 519(b))

COMPANY : Sony Corporation
Equipment : TransferJet module
MODEL NUMBER: CXN5100
SERIAL NUMBER: 4
POWER : DC3.3V
Remarks : -

UL Japan, Inc. SHONAN No.5 Shield Room

REPORT No. : 31JE261-SH-01-A-R1

REGULATION : FCC Part15SubpartF 503(d) 519(b)

DATE : 2011/6/17

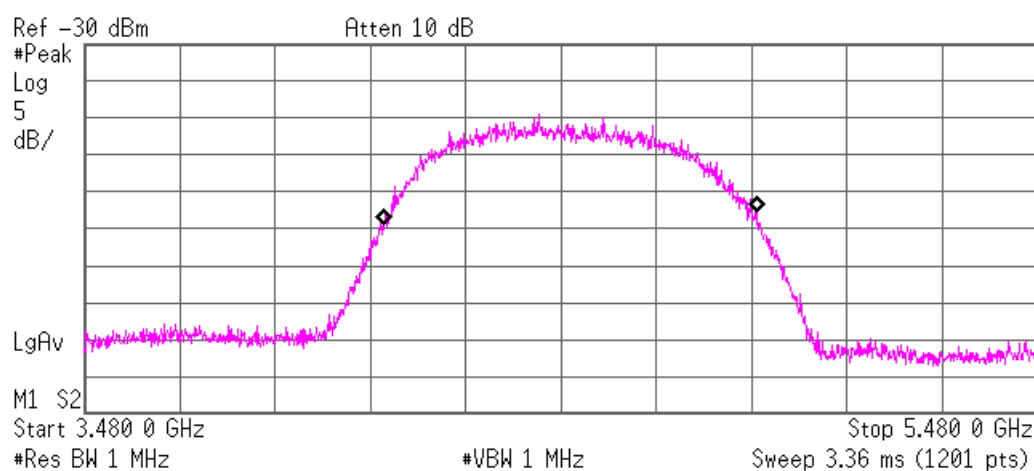
TEMP./HUMI : 26°C/61%

TEST MODE : Transmitting

ENGINEER : Tatsuya Arai

10dB Bandwidth: 707.580MHz (LIMIT: >500MHz)

Occupied Bandwidth (99%) : 784.1058MHz



Occupied Bandwidth
784.1058 MHz

Occ BW % Pwr 99.00 %
x dB -10.00 dB

Transmit Freq Error	19.581 MHz
x dB Bandwidth	707.580 MHz

DATA OF RADIATION TEST (Regulation: FCC 15.519(c))

UL Japan, Inc.

SHONAN NO.3 ANECHOIC CHAMBER

Report No. : 31JE0261-SH-01-A-R1

Company : Sony Corporation
 Equipment : TransferJet module
 Model : CXN5100
 Sample No. : 4
 Power : DC3.3V
 Mode : Transmitting

Regulation : FCC Part15F Section 15.519(c)
 Test Distance : 0.5m / 0.3m / 0.1m
 Date : 2011/6/14 : 2011/6/15 : 2011/6/16
 Temperature : 26deg.C : 25deg.C : 26deg.C
 Humidity : 54% : 53% : 51%
 ENGINEER : Shinichi Takano

Horizontal (RBW: 1MHz)

No.	FREQ	READING	ANT	AMP	CABLE	Distance	RESULT		LIMIT	MARGIN	Detector
	[MHz]	[dBuV]	Factor [dB]	GAIN [dB]	LOSS [dB]	Factor [dB]	3m [dBuV/m]	EIRP [dBm]	EIRP [dBm]	[dB]	
1	1500.00	38.2	25.0	40.7	1.5	15.6	8.4	-86.8	-75.3	11.5	RMS
2	1920.00	38.6	26.8	40.8	1.7	15.6	10.7	-84.5	-63.3	21.2	RMS
3	3080.00	38.0	29.0	41.1	2.3	15.6	12.6	-82.6	-61.3	21.3	RMS
4	4607.00	42.2	31.0	41.5	2.8	15.6	19.0	-76.2	-41.3	34.9	RMS
5	5994.00	37.0	33.5	41.0	3.1	15.6	17.0	-78.2	-41.3	36.9	RMS
6	7820.00	38.4	37.6	41.0	3.8	15.6	23.2	-72.0	-41.3	30.7	RMS
7	10330.00	37.4	39.4	39.8	4.2	15.6	25.6	-69.6	-41.3	28.3	RMS
8	14361.00	37.6	41.2	39.6	5.0	20.0	24.2	-71.0	-61.3	9.7	RMS
9	17920.00	38.4	48.1	39.3	5.6	29.5	23.3	-71.9	-61.3	10.6	RMS

No1-7: 0.5m, No.8: 0.3m, No.9: 0.1m

Vertical (RBW: 1MHz)

No.	FREQ	READING	ANT	AMP	CABLE	Distance	RESULT		LIMIT	MARGIN	Detector
	[MHz]	[dBuV]	Factor [dB]	GAIN [dB]	LOSS [dB]	Factor [dB]	3m [dBuV/m]	EIRP [dBm]	EIRP [dBm]	[dB]	
1	1596.00	40.1	25.4	40.8	1.5	15.6	10.6	-84.6	-75.3	9.3	RMS
2	1920.00	37.8	26.8	40.8	1.7	15.6	9.9	-85.3	-63.3	22.0	RMS
3	3080.00	37.4	29.0	41.1	2.2	15.6	11.9	-83.3	-61.3	22.0	RMS
4	4609.00	42.4	31.0	41.5	2.8	15.6	19.2	-76.0	-41.3	34.7	RMS
5	5995.00	37.2	33.5	41.0	3.1	15.6	17.2	-78.0	-41.3	36.7	RMS
6	6720.00	37.6	35.4	40.6	3.4	15.6	20.2	-75.0	-41.3	33.7	RMS
7	10334.80	37.5	39.4	39.8	4.2	15.6	25.7	-69.5	-41.3	28.2	RMS
8	14368.00	37.5	41.2	39.6	5.0	20.0	24.1	-71.1	-61.3	9.8	RMS
9	17920.00	39.2	48.1	39.3	5.6	29.5	24.1	-71.1	-61.3	9.8	RMS

No1-7: 0.5m, No.8: 0.3m, No.9: 0.1m

Sample Calculation :

RESULT=Reading + ANT Factor - Amp Gain + Cable Loss - Distance Factor

Distance Factor calculation 0.5m: $20 \cdot \log(3.0[m]/0.5[m]) = 15.6[dB]$

0.3m: $20 \cdot \log(3.0[m]/0.3[m]) = 20.0[dB]$

0.1m: $20 \cdot \log(3.0[m]/0.1[m]) = 29.5[dB]$

RESULT (EIRP) = RESULT (3m field strength) - 95.2

DATA OF RADIATION TEST (Regulation: FCC 15.519(c))

Company : Sony Corporation
Equipment : TransferJet module
Model : CXN5100
Sample No. : 4
Power : DC3.3V
Mode : Transmitting

UL Japan, Inc.

SHONAN NO.3 ANECHOIC CHAMBER

Report No. : 31JE0261-SH-01-A-R1

Regulation : FCC Part15F Section 15.519(c)
Test Distance : 3m
Date : 2011/6/16
Temperature : 26deg.C
Humidity : 51%
ENGINEER : Shinichi Takano

Emissions from digital circuitry (limits in Section 15.209)

Horizontal

No.	FREQ [MHz]	READING [dBuV]	ANT Factor [dB]	AMP GAIN [dB]	LOSS [dB]	Distance Factor [dB]	RESULT 3m [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	Detector
1	448.00	22.9	16.5	31.9	9.4	0.0	16.9	46.0	29.1	QP

Vertical

No.	FREQ [MHz]	READING [dBuV]	ANT Factor [dB]	AMP GAIN [dB]	LOSS [dB]	Distance Factor [dB]	RESULT 3m [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	Detector
1	448.00	23.2	16.5	31.9	9.4	0.0	17.2	46.0	28.8	QP

Sample Calculation :

RESULT=Reading + ANT Factor - Amp Gain + Loss (Cable + ATT) - Distance Factor

DATA OF RADIATION TEST (Regulation: FCC 15.519(d))

UL Japan, Inc.

SHONAN NO.3 ANECHOIC CHAMBER

Report No. : 31JE0261-SH-01-A-R1

Company : Sony Corporation
Equipment : TransferJet module
Model : CXN5100
Sample No. : 4
Power : DC3.3V
Mode : Transmitting

Regulation : FCC Part15F Section 15.519(d)
Test Distance : 0.5m
Date : 2011/6/15
Temperature : 25deg.C
Humidity : 53%

ENGINEER : Shinichi Takano

Horizontal (RBW: 1kHz)

No.	FREQ	READING	ANT	AMP	CABLE	Distance	RESULT		LIMIT	MARGIN	Detector
	[MHz]	[dBuV]	Factor [dB]	GAIN [dB]	LOSS [dB]	Factor [dB]	3m [dBuV/m]	EIRP [dBm]	EIRP [dBm]	[dB]	
1	1236.05	15.2	24.3	41.0	1.4	15.6	-15.7	-110.9	-85.3	25.6	RMS
2	1609.69	13.3	25.5	40.8	1.5	15.6	-16.1	-111.3	-85.3	26.0	RMS

Vertical (RBW: 1kHz)

No.	FREQ	READING	ANT	AMP	CABLE	Distance	RESULT		LIMIT	MARGIN	Detector
	[MHz]	[dBuV]	Factor [dB]	GAIN [dB]	LOSS [dB]	Factor [dB]	3m [dBuV/m]	EIRP [dBm]	EIRP [dBm]	[dB]	
1	1238.86	14.7	24.3	41.0	1.4	15.6	-16.2	-111.4	-85.3	26.1	RMS
2	1608.57	14.2	25.5	40.8	1.5	15.6	-15.2	-110.4	-85.3	25.1	RMS

Sample Calculation :

RESULT=Reading + ANT Factor - Amp Gain + Cable Loss - Distance Factor

Distance Factor calculation: $20 \cdot \log(3.0[m]/0.5[m]) = 15.6[dB]$

RESULT (EIRP) = RESULT (3m field strength) - 95.2

DATA OF RADIATION TEST (Regulation: FCC 15.519(e))

UL Japan, Inc.

SHONAN NO.3 ANECHOIC CHAMBER

Report No. : 31JE0261-SH-01-A-R1

Company : Sony Corporation
Equipment : TransferJet module
Model : CXN5100
Sample No. : 4
Power : DC3.3V
Mode : Transmitting

Regulation : FCC Part15F Section 15.519(e)
Test Distance : 0.5m
Date : 2011/6/15
Temperature : 25deg.C
Humidity : 53%

ENGINEER : Shinichi Takano

Horizontal (RBW: 3MHz)

No.	FREQ [MHz]	READING [dBuV]	ANT Factor [dB]	AMP GAIN [dB]	CABLE LOSS [dB]	Distance Factor [dB]	RESULT		LIMIT EIRP [dBm]	MARGIN [dB]	Detector
							3m [dBuV/m]	EIRP [dBm]			
1	4620.00	58.4	31.1	41.5	2.8	15.6	35.2	-35.5	0.0	35.5	Peak

Vertical (RBW: 3MHz)

No.	FREQ [MHz]	READING [dBuV]	ANT Factor [dB]	AMP GAIN [dB]	CABLE LOSS [dB]	Distance Factor [dB]	RESULT		LIMIT EIRP [dBm]	MARGIN [dB]	Detector
							3m [dBuV/m]	EIRP [dBm]			
1	4620.00	58.5	31.1	41.5	2.8	15.6	35.3	-35.4	0.0	35.4	Peak

Sample Calculation :

RESULT=Reading + ANT Factor - Amp Gain + Cable Loss - Distance Factor

Distance Factor calculation: $20 \times \log(3.0[m]/0.5[m]) = 15.6[dB]$

RESULT (EIRP) = RESULT (3m field strength) - 95.2 - $20 \log(RBW/50)$

Transmitter Timeout (Regulation: FCC 15.519(a)(1))

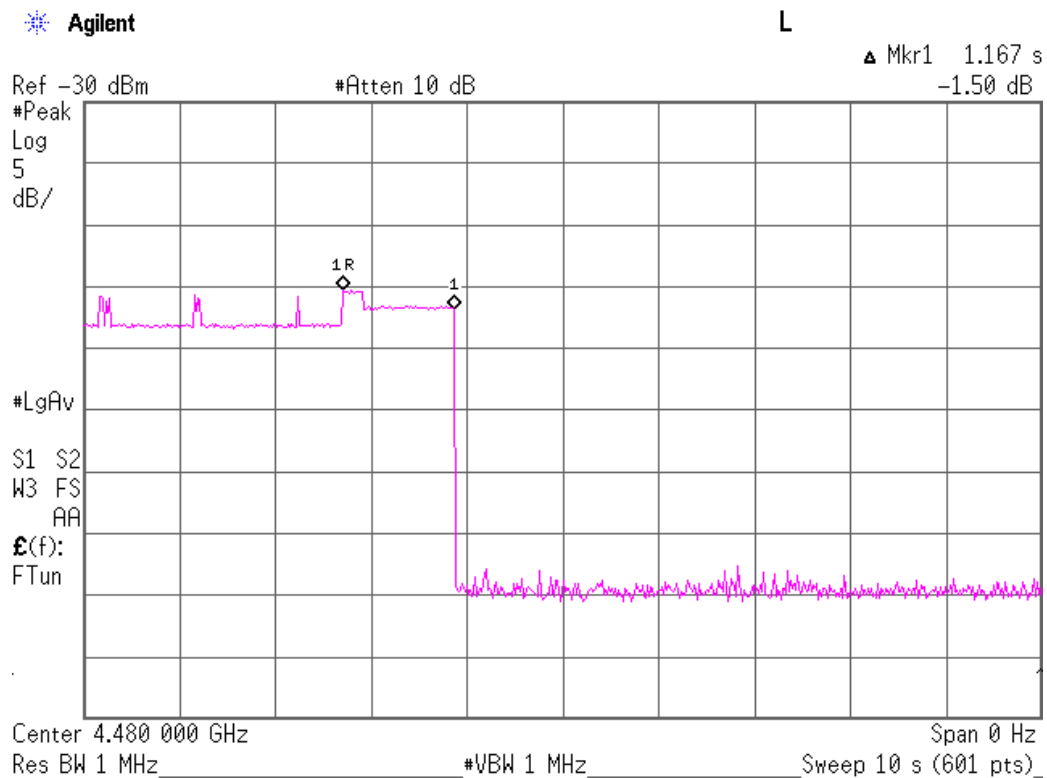
COMPANY : Sony Corporation
 Equipment : TransferJet module
 MODEL NUMBER: CXN5100
 SERIAL NUMBER: 4
 POWER : DC3.3V
 Remarks : -

UL Japan, Inc. SHONAN No.5 Shield Room
 REPORT No. : 31JE0261-SH-01-A
 REGULATION : FCC Part15SubpartF 519(a)(1)
 DATE : 2011/6/17
 TEMP./HUMI : 25°C/61%
 TEST MODE : Transmitting
 ENGINEER : Tatsuya Arai

Marker 1R: The time that the receiver was removed (during Data transmitting).

Marker 1: The time that the EUT stopped transmitting.

Transmitter Timeout: 1.167s (LIMIT: <10s)



DATA OF RADIATION TEST (Precheck Worst Case)

UL Japan, Inc.
SHONAN NO.3 ANECHOIC CHAMBER
Report No. : 31JE0261-SH-01-A-R1

Company : Sony Corporation
Equipment : TransferJet module
Model : CXN5100
Sample No. : 4
Power : DC3.3V
Mode : Transmitting

Regulation : FCC Part15F Section 15.519(c)
Test Distance : 0.5m
Date : 2011/6/14
Temperature : 26deg.C
Humidity : 54%

ENGINEER : Shinichi Takano

Horizontal (RBW: 1MHz)

No.	Antenna Type	Cable Type	FREQ [MHz]	READING [dBuV]	ANT Factor [dB]	AMP GAIN [dB]	CABLE LOSS [dB]	Distance Factor [dB]	RESULT 3m [dBuV/m]	EIRP [dBm]	LIMIT [dBm]	MARGIN [dB]	Detector
1	A	A	4607.00	42.2	31.0	41.5	2.8	15.6	19.0	-76.2	-41.3	34.9	RMS
2	A	B	4620.00	40.8	31.1	41.5	2.8	15.6	17.7	-77.5	-41.3	36.2	RMS
3	B	A	4619.00	40.6	31.1	41.5	2.8	15.6	17.5	-77.7	-41.3	36.4	RMS
4	B	B	4676.00	40.1	31.2	41.5	2.8	15.6	17.1	-78.1	-41.3	36.8	RMS

Vertical (RBW: 1MHz)

No.	Antenna Type	Cable Type	FREQ [MHz]	READING [dBuV]	ANT Factor [dB]	AMP GAIN [dB]	CABLE LOSS [dB]	Distance Factor [dB]	RESULT 3m [dBuV/m]	EIRP [dBm]	LIMIT [dBm]	MARGIN [dB]	Detector
1	A	A	4609.00	42.4	31.0	41.5	2.8	15.6	19.2	-76.0	-41.3	34.7	RMS
2	A	B	4611.00	41.0	31.0	41.5	2.8	15.6	17.8	-77.4	-41.3	36.1	RMS
3	C	B	4611.00	40.4	31.0	41.5	2.8	15.6	17.2	-78.0	-41.3	36.7	RMS
4	C	C	4611.00	39.9	31.0	41.5	2.8	15.6	16.7	-78.5	-41.3	37.2	RMS

Sample Calculation :

RESULT=Reading + ANT Factor - Amp Gain + Cable Loss - Distance Factor

Distance Factor calculation 0.5m: $20 \cdot \log(3.0[m]/0.5[m]) = 15.6[\text{dB}]$

RESULT (EIRP) = RESULT (3m field strength) - 95.2

APPENDIX 3 Test Instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
SAF-04	Pre Amplifier	TOYO Corporation	TPA0118-36	1440489	RE 1-18GHz	2011/03/23 * 12
SCC-G12	Coaxial Cable	Suhner	SUCOFLEX 102	30790/2	RE 1-18GHz	2011/03/23 * 12
SCC-G13	Coaxial Cable	Suhner	SUCOFLEX 102	31599/2	RE 1-18GHz	2011/03/23 * 12
SHA-03	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-739	RE 1-18GHz	2010/08/17 * 12
SOS-05	Humidity Indicator	A&D	AD-5681	4062518	RE	2011/02/23 * 12
SSA-02	Spectrum Analyzer	Agilent	E4448A	MY48250106	RE 1-40GHz	2011/03/07 * 12
SJM-10	Measure	PROMART	SEN1935	-	RE	-
COTS-SEMI-1	EMI Software	TSJ	TEPTO-DV(RE,CE, RF,IMF)	-	RE	-
SAF-08	Pre Amplifier	TOYO Corporation	HAP18-26W	00000019	RE 18-26.5GHz	2011/03/16 * 12
SAF-10	Pre Amplifier	TOYO Corporation	HAP26-40W	00000010	RE 18-26.5GHz	2011/03/16 * 12
SHA-04	Horn Antenna	ETS LINDGREN	3160-09	LM3640	RE 18-26.5GHz	2011/03/15 * 12
SHA-06	Horn Antenna	ETS LINDGREN	3160-10	LM3459	RE 26.5-40GHz	2011/03/15 * 12
SCC-G17	Coaxial Cable	Suhner	SUCOFLEX 104A	46291/4A	RE 18-26.5GHz	2011/03/16 * 12
SCC-G19	Coaxial Cable	Suhner	SUCOFLEX 102A	1188/2A	RE 26.5-40GHz	2011/03/16 * 12
SAF-03	Pre Amplifier	SONOMA	310N	290213	RE 30-1000MHz	2011/02/17 * 12
SAT6-03	Attenuator	JFW	50HF-006N	-	RE 30-1000MHz	2011/02/17 * 12
SBA-03	Biconical Antenna	Schwarzbeck	BBA9106	91032666	RE 30-300MHz	2010/10/15 * 12
SCC-C1/C2/C3/C4/C5/C10/SRSE-03	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/NS4906	-/0901-271(RF Selector)	RE 30-1000MHz	2011/04/28 * 12
SLA-03	Logperiodic Antenna	Schwarzbeck	UHALP9108A	UHALP 9108-A 0901	RE 300-1000MHz	2010/10/15 * 12
STR-03	Test Receiver	Rohde & Schwarz	ESI40	100054/040	RE 30-1000MHz	2010/07/21 * 12
SAEC-03(NSA)	Semi-Anechoic Chamber	TDK	SAEC-03(NSA)	3	RE	2010/09/13 * 12
SSA-03	Spectrum Analyzer	Agilent	E4448A	MY48250152	AT	2010/11/16 * 12
SCC-G11	Coaxial Cable	Suhner	SUCOFLEX 102	31595/2	AT	2011/03/23 * 12
SCC-G13	Coaxial Cable	Suhner	SUCOFLEX 102	31599/2	AT	2011/03/23 * 12
SAT10-04	Attenuator(above1GHz)	Agilent	8493C-010	74863	AT	2010/12/15 * 12
SPSC-03	Power Splitters/Combiners	Mini-Circuit	ZFSC-2-10G	-	AT	2011/04/27 * 12
KAF-04	Pre Amplifier	Agilent	8449B	3008A01600	AT	2011/04/21 * 12
SOS-09	Humidity Indicator	A&D	AD-5681	4061484	AT	2011/03/02 * 12

The expiration date of the calibration is the end of the expired month .

As for some calibrations performed after the tested dates , those test equipment have been controlled by means of an unbroken chains of calibrations .

All equipment is calibrated with valid calibrations . Each measurement data is traceable to the national or international standards .

Test Item :

RE: Radiated emission, AT: Antenna terminal conducted test

APPENDIX 3 Test Instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
STR-03	Test Receiver	Rohde & Schwarz	ESI40	100054/040	CE/RE	2010/07/21 * 12
SJM-10	Measure	PROMART	SEN1935	-		-
COTS-SEMI-1	EMI Software	TSJ	TEPTO-DV(RE,CE,RFI,MF)	-		-
SCC-C9/C10/S RSE-03	Coaxial Cable&RF Selector	Suhner/Suhner/TOYO	RG223U/141PE/N S4906	-/0901-271(RF Selector)	CE	2011/04/28 * 12
SLS-06	LISN	Schwarzbeck	NSLK8126	8126440	CE	2011/03/24 * 12
SAT13-01	Attenuator	JFW	50FP-013-H2 N	-	CE	2011/02/17 * 12
SOS-06	Humidity Indicator	A&D	AD-5681	4062118	CE	2011/03/02 * 12

The expiration date of the calibration is the end of the expired month .

As for some calibrations performed after the tested dates , those test equipment have been controlled by means of an unbroken chains of calibrations .

All equipment is calibrated with valid calibrations . Each measurement data is traceable to the national or international standards .

Test Item :

CE: Conducted emission,