

DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.3 Shielded room
Date : 2010/01/18

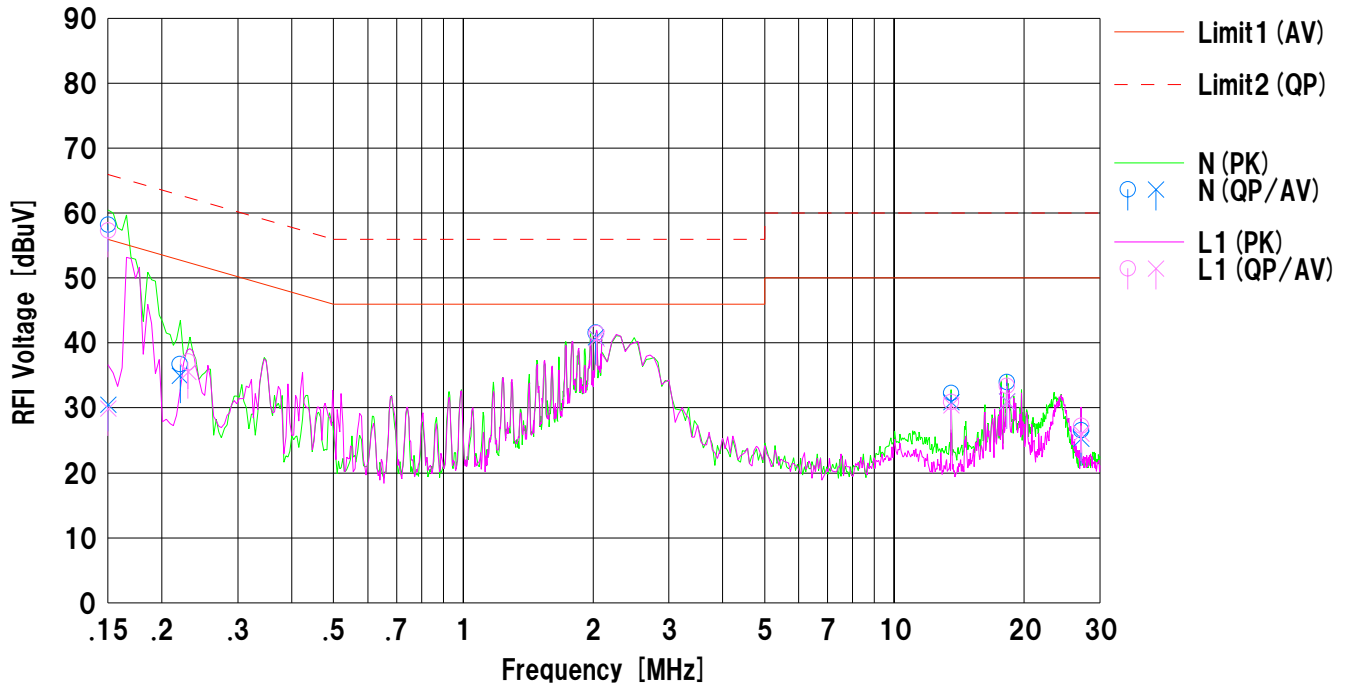
Company : RICOH COMPANY LTD.
Kind of EUT : Color Laser Printer
Model No. : Aficio SP C431DN
Serial No. : S9491117004

Mode : Transmitting (802.11a_5180MHz)
Report No. : 30CE0005-SH-01-C-R2
Power : AC120V/60Hz
Temp./Humi. : 18°C / 25%

Remarks : -

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

Engineer : Hikaru Shirasawa



No.	Freq. [MHz]	Reading		C.Fac [dB]	Results		Limit		Margin		Phase	Comment
		<QP> [dBuV]	<AV> [dBuV]		<QP> [dBuV]	<AV> [dBuV]	<AV> [dBuV]	<QP> [dBuV]	<AV> [dB]	<QP> [dB]		
1	0.15000	47.2	19.5	11.0	58.2	30.5	56.0	66.0	25.5	7.8	N	
2	0.22034	26.8	24.9	10.0	36.8	34.9	52.8	62.8	17.9	26.1	N	
3	2.03381	31.7	31.1	9.8	41.5	40.9	46.0	56.0	5.1	14.5	N	
4	13.56000	21.8	20.4	10.5	32.3	30.9	50.0	60.0	19.1	27.7	N	
5	18.24288	23.2	20.1	10.8	34.0	30.9	50.0	60.0	19.1	26.0	N	
6	27.12000	15.2	13.8	11.4	26.6	25.2	50.0	60.0	24.8	33.4	N	
7	0.15000	46.3	18.9	11.0	57.3	29.9	56.0	66.0	26.1	8.7	L1	
8	0.23019	27.1	25.6	10.0	37.1	35.6	52.4	62.4	16.8	25.3	L1	
9	2.03747	31.7	30.9	9.8	41.5	40.7	46.0	56.0	5.3	14.5	L1	
10	13.56000	20.4	19.9	10.5	30.9	30.4	50.0	60.0	19.6	29.1	L1	
11	18.24349	22.6	20.1	10.8	33.4	30.9	50.0	60.0	19.1	26.6	L1	
12	27.12000	15.9	14.6	11.4	27.3	26.0	50.0	60.0	24.0	32.7	L1	

Calculation: Result [dBuV] = Reading [dBuV] + C.Fac (LISN+Cable) [dB]

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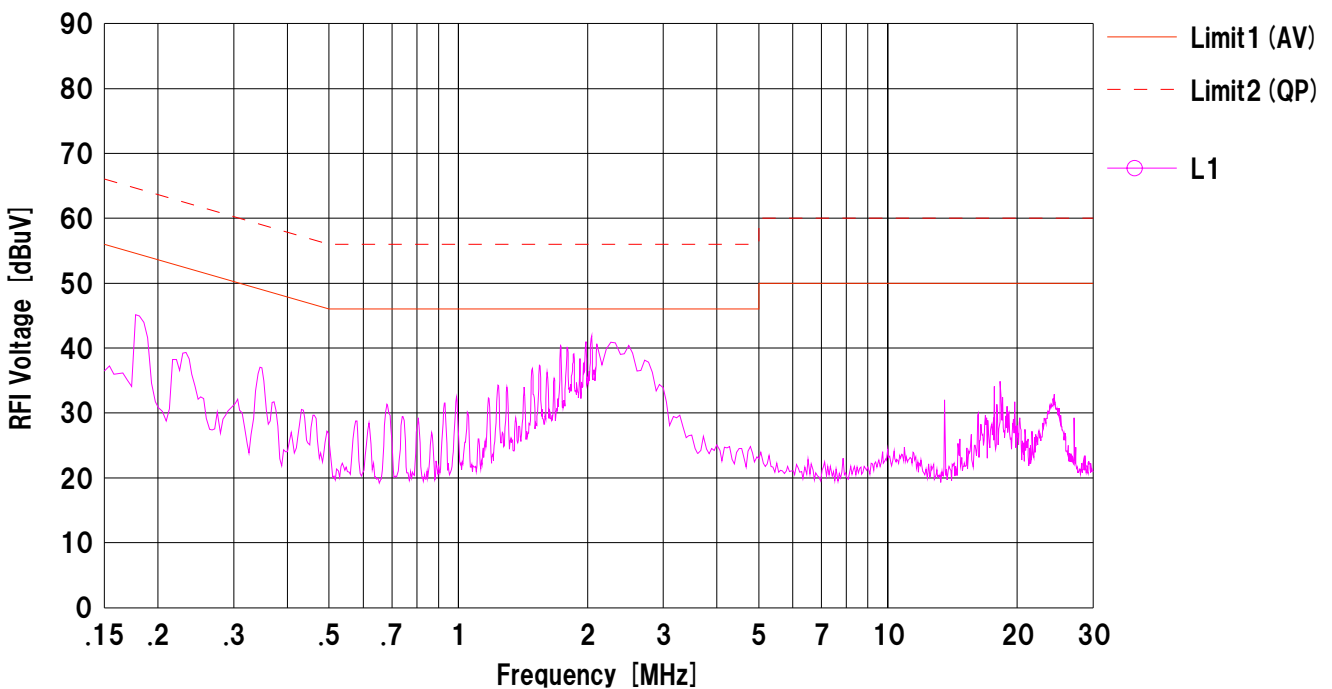
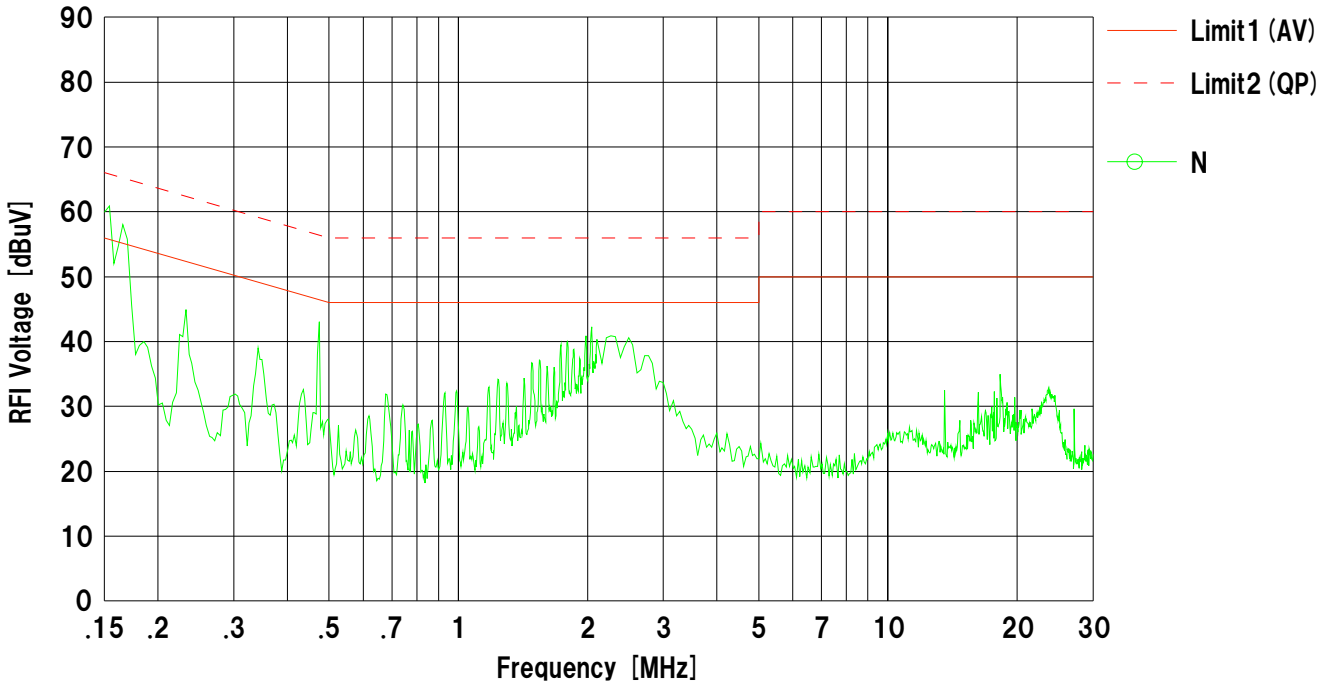
Company : RICOH COMPANY LTD.
Kind of EUT : Color Laser Printer
Model No. : Aficio SP C431DN
Serial No. : S9491117004

Mode : Transmitting (802.11a_5200MHz)
Report No. : 30CE0005-SH-01-C-R2
Power : AC120V/60Hz
Temp./Humi. : 18°C / 25%

Remarks : -

Limit1 : FCC 15C (15.207) AV
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Engineer : Hikaru Shirasawa



Calculation: Result [dBuV] = Reading [dBuV] + C.Fac (LISN+Cable) [dB]

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UL Japan, Inc. Shonan EMC Lab. No.3 Shielded room
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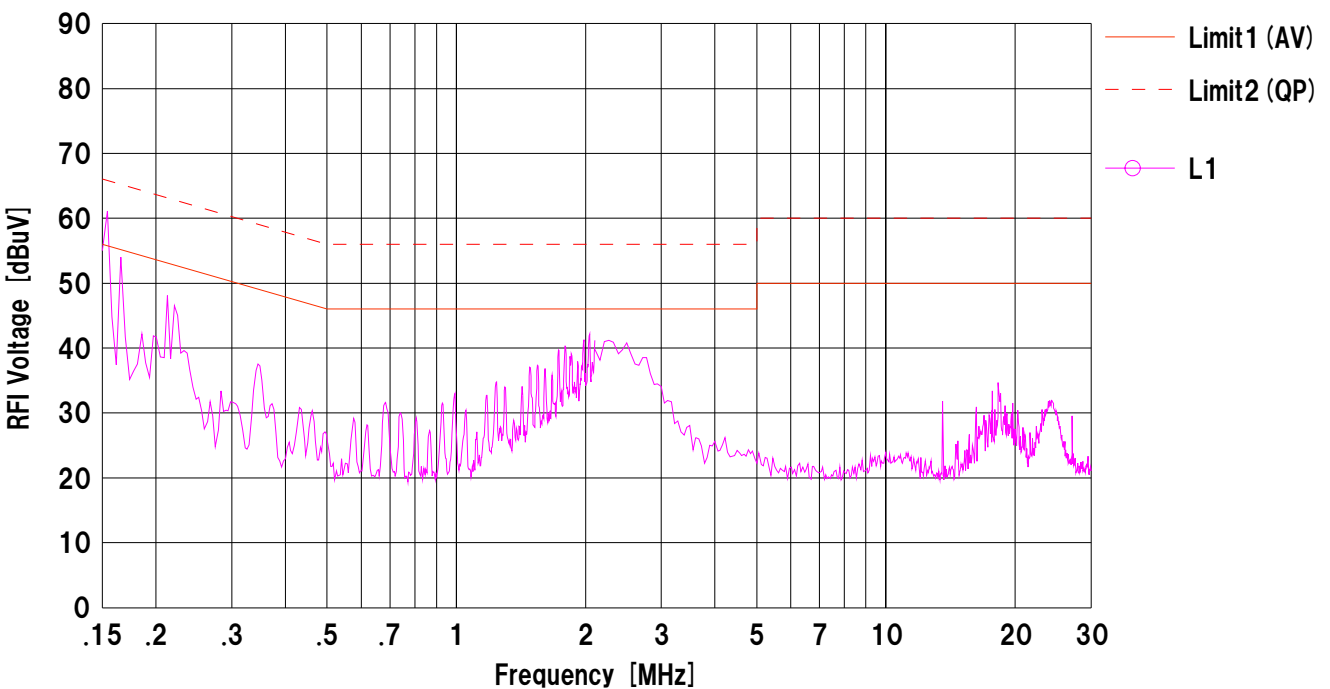
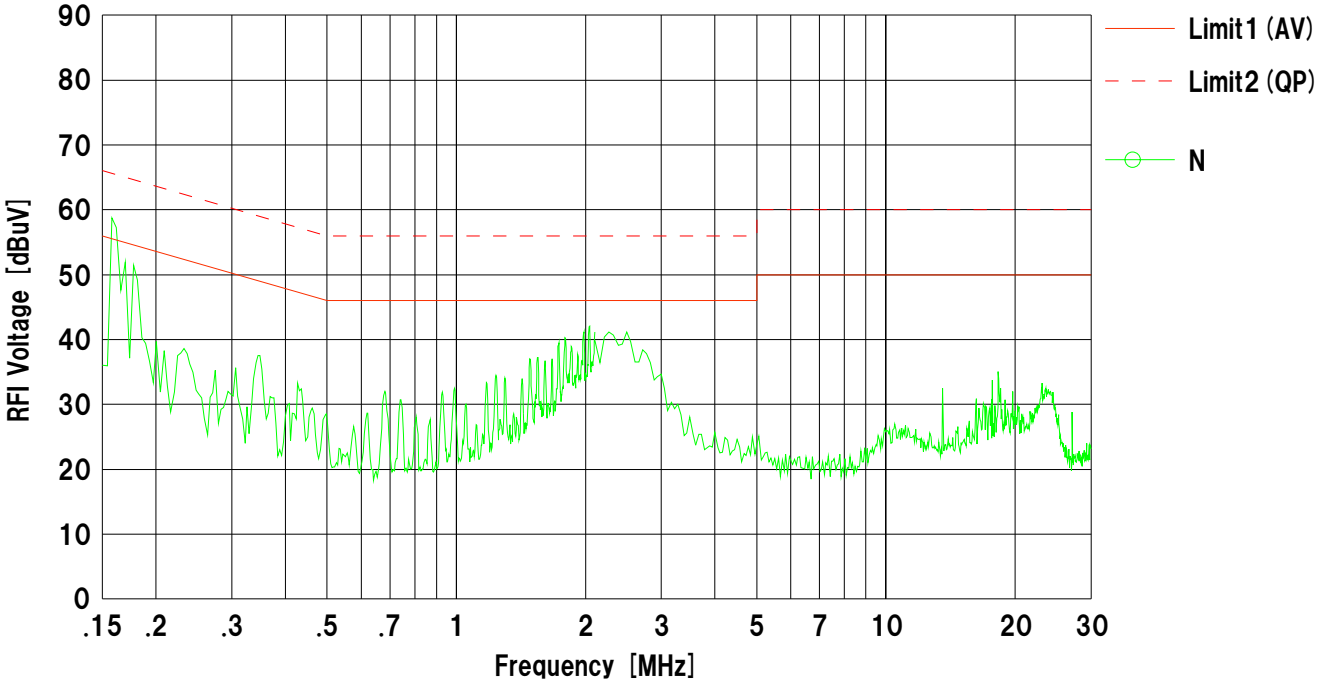
Company : RICOH COMPANY LTD.
Kind of EUT : Color Laser Printer
Model No. : Aficio SP C431DN
Serial No. : S9491117004

Mode : Transmitting (802.11a_5240MHz)
Report No. : 30CE0005-SH-01-C-R2
Power : AC120V/60Hz
Temp./Humi. : 18°C / 25%

Remarks : -

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

Engineer : Hikaru Shirasawa



Calculation: Result [dBuV] = Reading [dBuV] + C.Fac (LISN+Cable) [dB]

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UL Japan, Inc. Shonan EMC Lab. No.3 Shielded room
Date : 2010/01/18

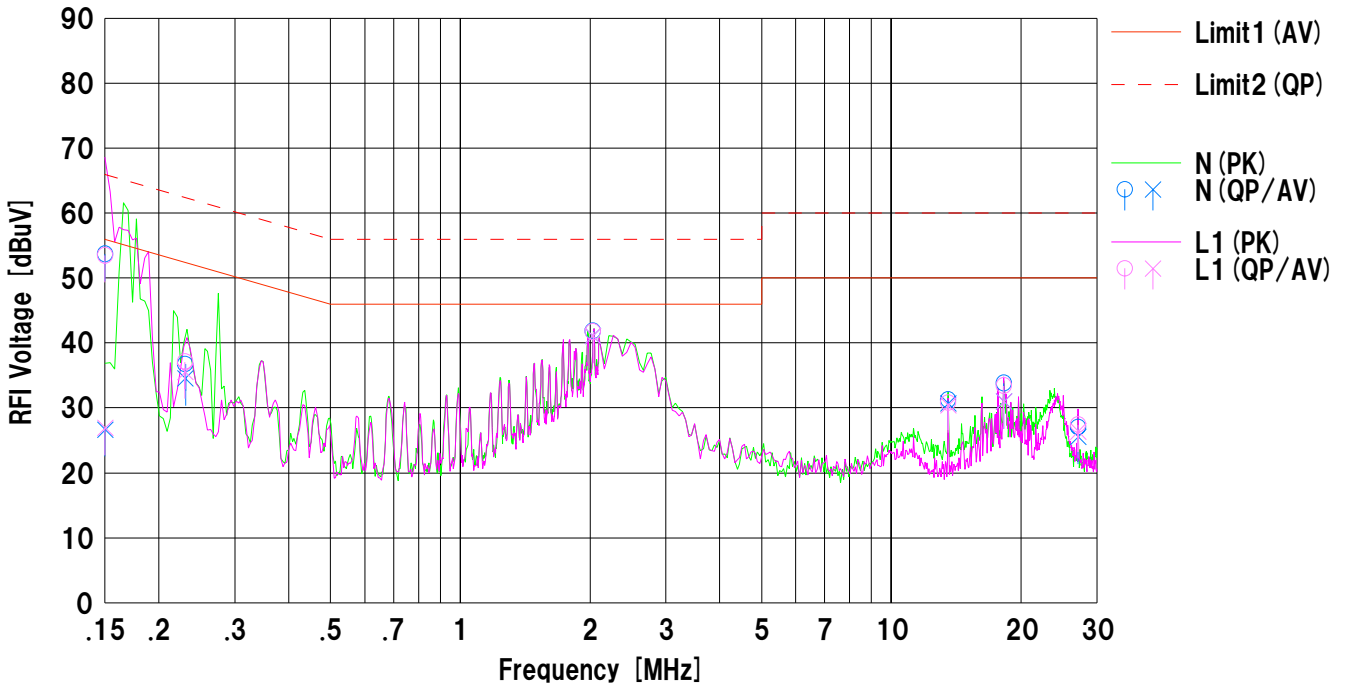
Company : RICOH COMPANY LTD.
Kind of EUT : Color Laser Printer
Model No. : Aficio SP C431DN
Serial No. : S9491117004

Mode : Transmitting (802.11a_5260MHz)
Report No. : 30CE0005-SH-01-C-R2
Power : AC120V/60Hz
Temp./Humi. : 18°C / 25%

Remarks : -

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

Engineer : Hikaru Shirasawa



No.	Freq. [MHz]	Reading		C.Fac [dB]	Results		Limit		Margin		Phase	Comment
		<QP> [dBuV]	<AV> [dBuV]		<QP> [dBuV]	<AV> [dBuV]	<AV> [dBuV]	<QP> [dBuV]	<AV> [dB]	<QP> [dB]		
1	0.15000	42.7	15.7	11.0	53.7	26.7	56.0	66.0	29.4	12.3	N	
2	0.23028	26.7	24.6	10.0	36.7	34.6	52.4	62.4	17.9	25.7	N	
3	2.03543	32.0	31.3	9.8	41.8	41.1	46.0	56.0	4.9	14.2	N	
4	13.56000	20.8	20.2	10.5	31.3	30.7	50.0	60.0	19.3	28.8	N	
5	18.24261	23.0	20.2	10.8	33.8	31.0	50.0	60.0	19.0	26.2	N	
6	27.12000	15.6	14.1	11.4	27.0	25.5	50.0	60.0	24.5	33.0	N	
7	0.15000	42.5	15.9	11.0	53.5	26.9	56.0	66.0	29.1	12.5	L1	
8	0.22996	27.1	25.6	10.0	37.1	35.6	52.5	62.5	16.9	25.4	L1	
9	2.03528	31.9	31.3	9.8	41.7	41.1	46.0	56.0	4.9	14.3	L1	
10	13.56000	20.3	19.9	10.5	30.8	30.4	50.0	60.0	19.6	29.2	L1	
11	18.24346	22.6	20.2	10.8	33.4	31.0	50.0	60.0	19.0	26.6	L1	
12	27.12000	16.0	15.0	11.4	27.4	26.4	50.0	60.0	23.6	32.6	L1	

Calculation: Result [dBuV] = Reading [dBuV] + C.Fac (LISN+Cable) [dB]

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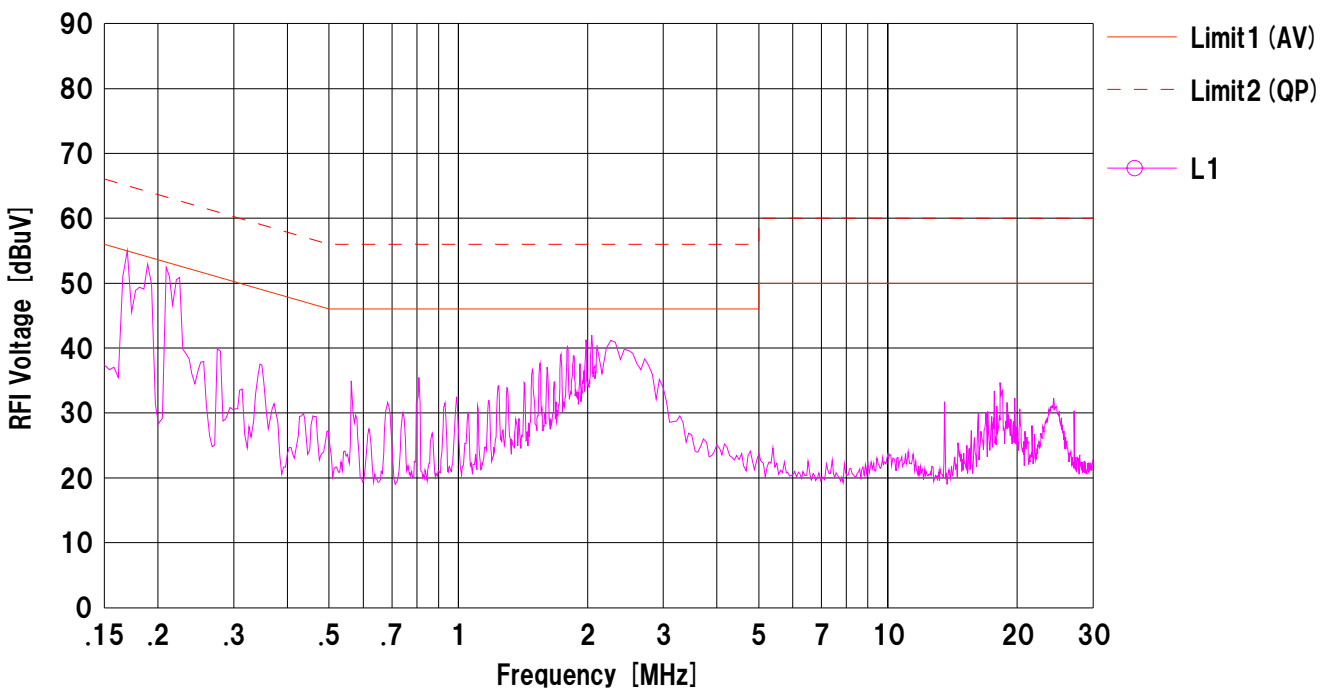
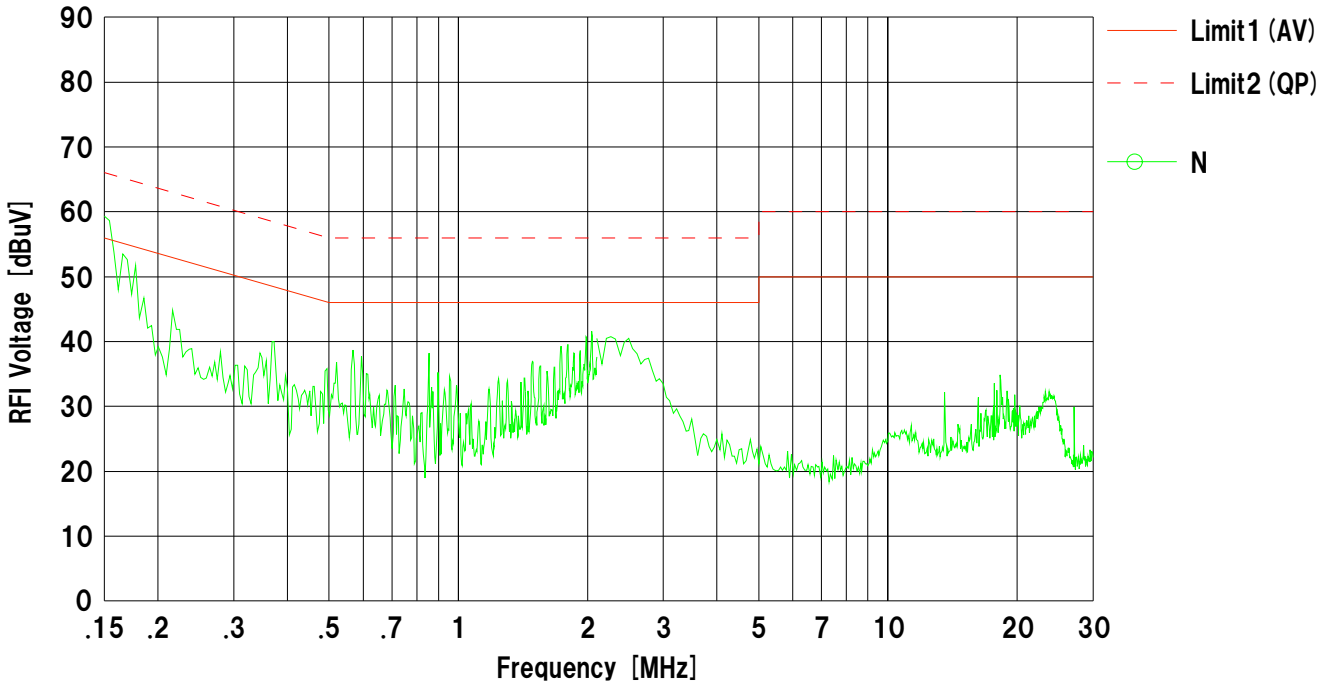
Company : RICOH COMPANY LTD.
Kind of EUT : Color Laser Printer
Model No. : Aficio SP C431DN
Serial No. : S9491117004

Mode : Transmitting (802.11a_5280MHz)
Report No. : 30CE0005-SH-01-C-R2
Power : AC120V/60Hz
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Remarks : -

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

Engineer : Hikaru Shirasawa



Calculation: Result [dBuV] = Reading [dBuV] + C.Fac (LISN+Cable) [dB]

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UL Japan, Inc. Shonan EMC Lab. No.3 Shielded room
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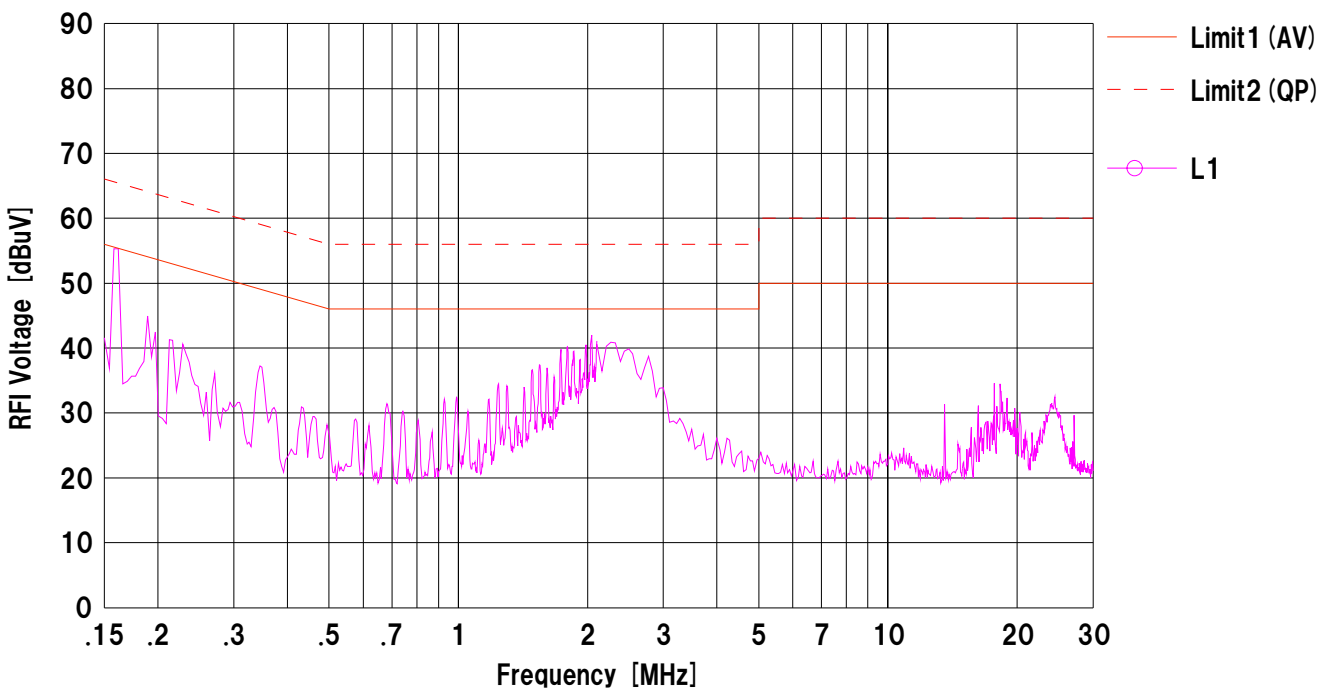
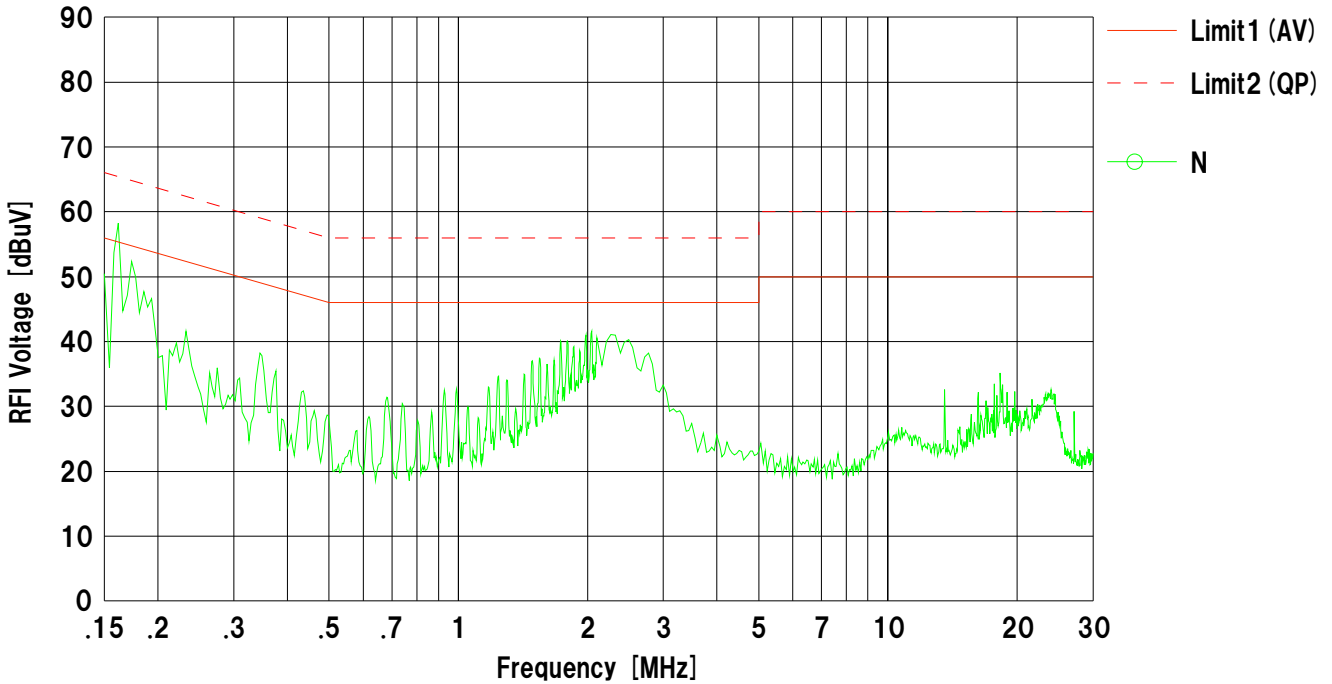
Company : RICOH COMPANY LTD.
Kind of EUT : Color Laser Printer
Model No. : Aficio SP C431DN
Serial No. : S9491117004

Mode : Transmitting (802.11a_5320MHz)
Report No. : 30CE0005-SH-01-C-R2
Power : AC120V/60Hz
Temp./Humi. : 18°C / 25%

Remarks : -

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

Engineer : Hikaru Shirasawa



Calculation:Result [dBuV] =Reading [dBuV] +C.Fac (LISN+Cable) [dB]

DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber
Date : 2010/01/13

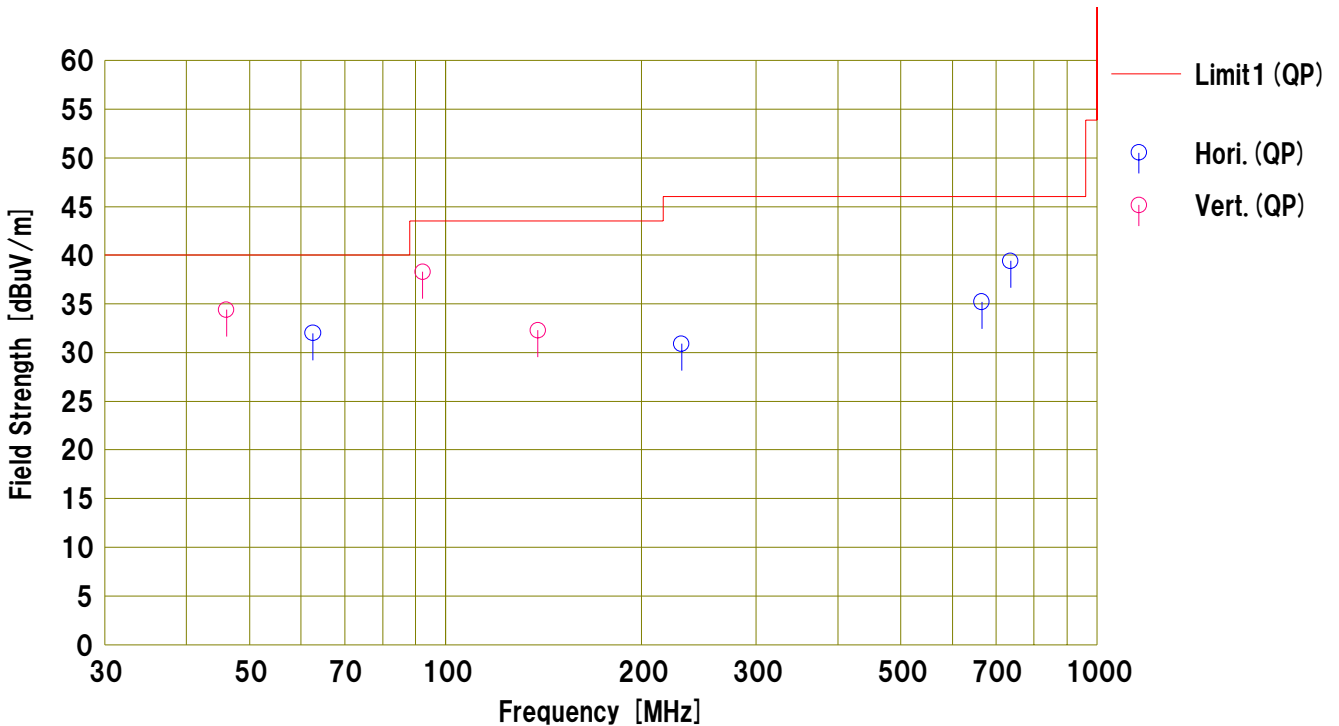
Company : RICOH COMPANY LTD.
Kind of EUT : Color Laser Printer
Model No. : Aficio SP C431DN
Serial No. : S9491117004

Mode : Transmitting (802.11a_5180MHz)
Report No. : 30CE0005-SH-01-C-R2
Power : AC120V/60Hz
Temp./Humi. : 19°C / 32%

Remarks : -

Limit1 : FCC15.209 3m, below 1GHz:QP, above 1GHz:PK

Engineer : Hikaru Shirasawa



No.	Freq. [MHz]	Reading	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result	Limit	Margin	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		[dBuV]				[dBuV/m]	[dBuV/m]	[dB]					
1	62.607	49.0	8.3	6.8	32.1	32.0	40.0	8.0	Hori	353	84	BC	
2	230.406	38.0	17.0	7.9	32.0	30.9	46.0	15.1	Hori	145	104	BC	
3	665.933	37.7	19.8	9.6	31.9	35.2	46.0	10.8	Hori	100	195	LP	
4	737.296	40.8	20.4	9.8	31.6	39.4	46.0	6.6	Hori	137	74	LP	
5	46.086	46.9	12.9	6.7	32.1	34.4	40.0	5.6	Vert.	100	186	BC	
6	92.164	54.7	8.6	7.1	32.1	38.3	43.5	5.2	Vert.	109	100	BC	
7	138.540	42.6	14.3	7.4	32.0	32.3	43.5	11.2	Vert.	100	130	BC	

Calculation: Result [dBuV/m] = Reading [dBuV] + Ant.Fac [dB/m] + Loss (Cable+ATT) [dB] - Gain (AMP) [dB]
Ant.Type=BC:Biconical Antenna, LP:Logperiodic Antenna, SHA**:Horn Antenna

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UL Japan, Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber
Date : 2010/01/13

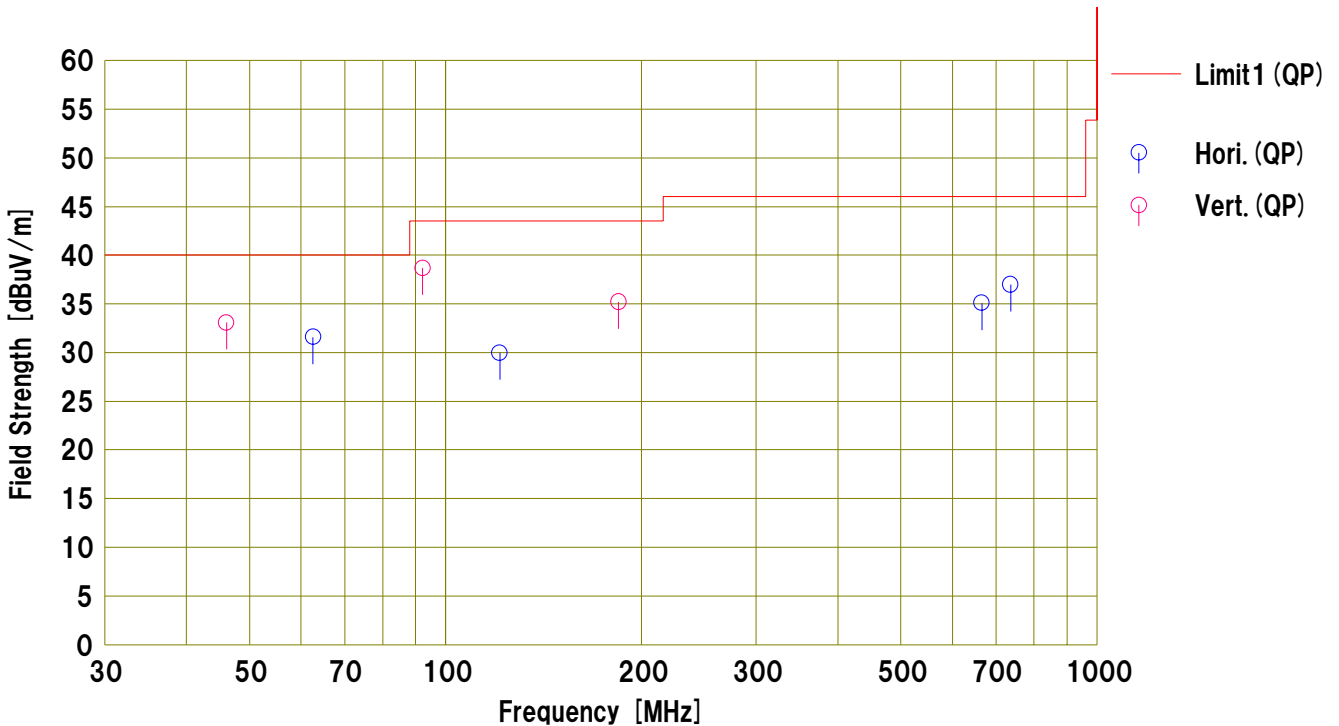
Company : RICOH COMPANY LTD.
Kind of EUT : Color Laser Printer
Model No. : Aficio SP C431DN
Serial No. : S9491117004

Mode : Transmitting (802.11a_5200MHz)
Report No. : 30CE0005-SH-01-C-R2
Power : AC120V/60Hz
Temp./Humi. : 19°C / 32%

Remarks : -

Limit1 : FCC15.209 3m, below 1GHz:QP, above 1GHz:PK

Engineer : Hikaru Shirasawa



No.	Freq. [MHz]	Reading	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result	Limit	Margin	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		[dBuV]				[dBuV/m]	[dBuV/m]	[dB]					
1	62.638	48.9	8.0	6.8	32.1	31.6	40.0	8.4	Hori	372	82	BC	
2	121.083	41.6	13.1	7.3	32.0	30.0	43.5	13.5	Hori	157	85	BC	
3	665.914	37.6	19.8	9.6	31.9	35.1	46.0	10.9	Hori	100	198	LP	
4	737.307	38.4	20.4	9.8	31.6	37.0	46.0	9.0	Hori	145	70	LP	
5	46.093	45.6	12.9	6.7	32.1	33.1	40.0	6.9	Vert.	100	154	BC	
6	92.160	55.1	8.6	7.1	32.1	38.7	43.5	4.8	Vert.	107	105	BC	
7	184.323	43.4	16.1	7.7	32.0	35.2	43.5	8.3	Vert.	100	143	BC	

Calculation: Result [dBuV/m] = Reading [dBuV] + Ant.Fac [dB/m] + Loss (Cable+ATT) [dB] - Gain (AMP) [dB]
Ant.Type=BC:Biconical Antenna, LP:Logperiodic Antenna, SHA**:Horn Antenna

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UL Japan, Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber
Date : 2010/01/13

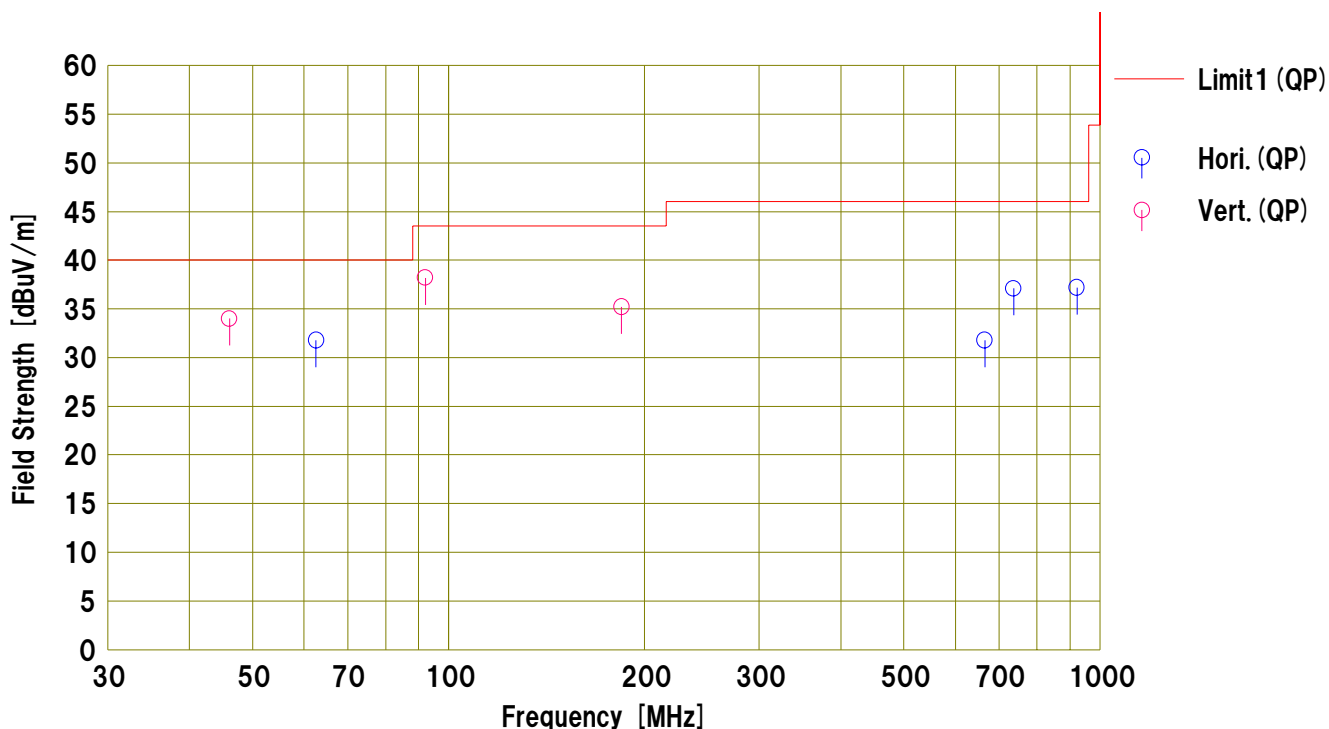
Company : RICOH COMPANY LTD.
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Remarks : -

Limit1 : FCC15.209 3m, below 1GHz:QP, above 1GHz:PK

Engineer : Hikaru Shirasawa



No.	Freq. [MHz]	Reading	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result	Limit	Margin	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<QP> [dBuV]				<QP> [dBuV/m]	<QP> [dB]						
1	62.627	48.8	8.3	6.8	32.1	31.8	40.0	8.2	Hori	351	94	BC	
2	665.939	34.3	19.8	9.6	31.9	31.8	46.0	14.2	Hori	108	205	LP	
3	737.290	38.5	20.4	9.8	31.6	37.1	46.0	8.9	Hori	144	69	LP	
4	921.640	35.6	22.1	10.3	30.8	37.2	46.0	8.8	Hori	100	133	LP	
5	46.080	46.5	12.9	6.7	32.1	34.0	40.0	6.0	Vert.	100	115	BC	
6	92.141	54.6	8.6	7.1	32.1	38.2	43.5	5.3	Vert.	100	106	BC	
7	184.326	43.4	16.1	7.7	32.0	35.2	43.5	8.3	Vert.	100	140	BC	

Calculation:Result [dBuV/m] =Reading [dBuV] +Ant.Fac [dB/m] +Loss (Cable+ATT) [dB] -Gain (AMP) [dB]
Ant.Type=BC:Biconical Antenna, LP:Logperiodic Antenna, SHA**:Horn Antenna

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UL Japan, Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber
Date : 2010/01/13

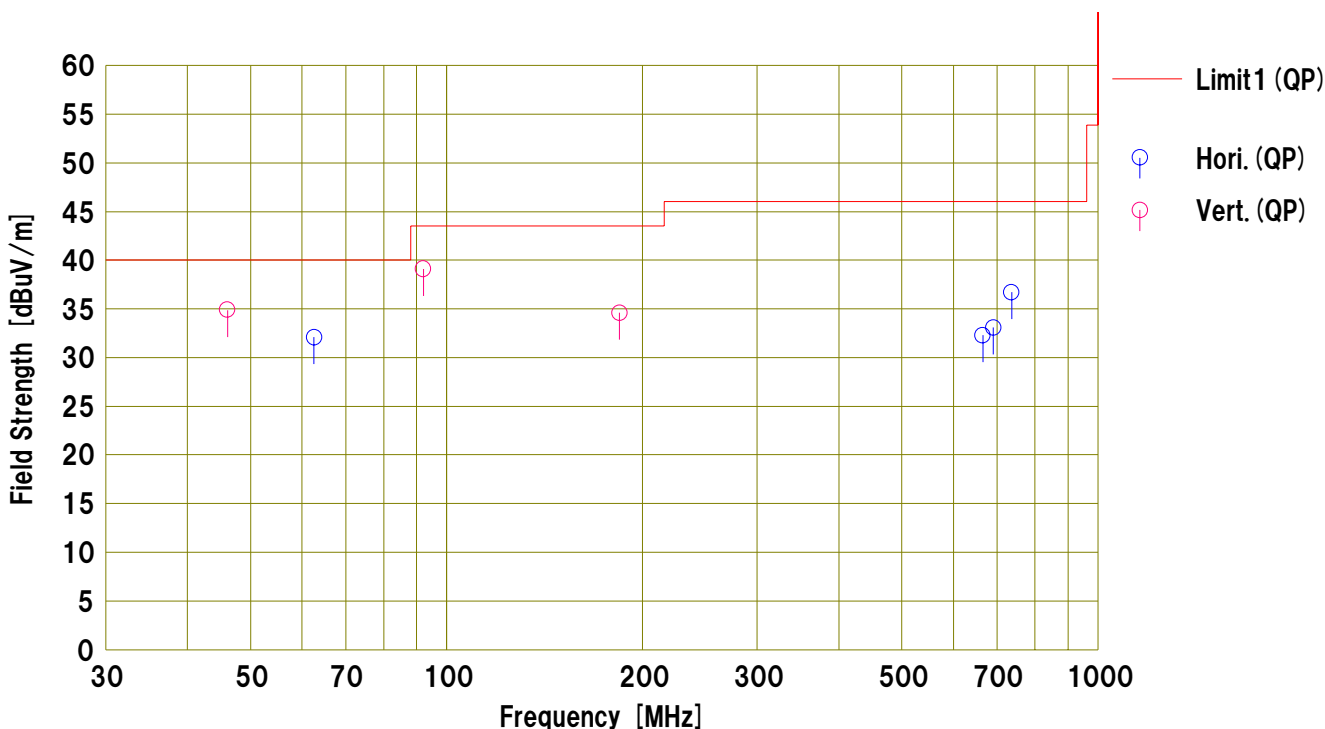
Company : RICOH COMPANY LTD.
Kind of EUT : Color Laser Printer
Model No. : Aficio SP C431DN
Serial No. : S9491117004

Mode : Transmitting (802.11a_5260MHz)
Report No. : 30CE0005-SH-01-C-R2
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Limit1 : FCC15.209 3m, below 1GHz:QP, above 1GHz:PK

Engineer : Hikaru Shirasawa



No.	Freq. [MHz]	Reading	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result	Limit	Margin	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<QP> [dBuV]				<QP> [dBuV/m]	<QP> [dB]						
1	62.623	49.4	8.0	6.8	32.1	32.1	40.0	7.9	Hori	374	99	BC	
2	665.877	34.8	19.8	9.6	31.9	32.3	46.0	13.7	Hori	100	198	LP	
3	691.218	35.1	20.1	9.7	31.8	33.1	46.0	12.9	Hori	140	155	LP	
4	737.282	38.1	20.4	9.8	31.6	36.7	46.0	9.3	Hori	145	69	LP	
5	46.092	47.4	12.9	6.7	32.1	34.9	40.0	5.1	Vert.	100	191	BC	
6	92.149	55.5	8.6	7.1	32.1	39.1	43.5	4.4	Vert.	100	108	BC	
7	184.332	42.8	16.1	7.7	32.0	34.6	43.5	8.9	Vert.	100	148	BC	

Calculation: Result [dBuV/m] = Reading [dBuV] + Ant.Fac [dB/m] + Loss (Cable+ATT) [dB] - Gain (AMP) [dB]
Ant.Type=BC:Biconical Antenna, LP:Logperiodic Antenna, SHA**:Horn Antenna

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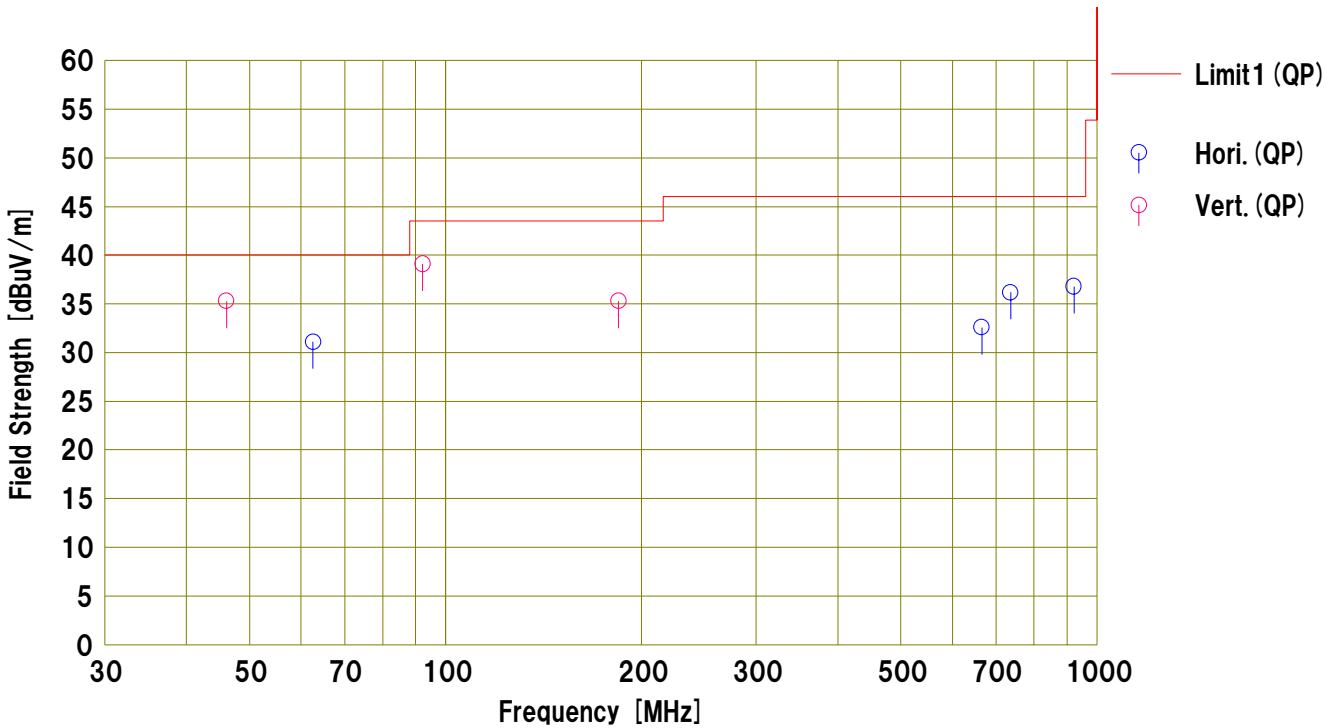
Company : RICOH COMPANY LTD.
Kind of EUT : Color Laser Printer
Model No. : Aficio SP C431DN
Serial No. : S9491117004

Mode : Transmitting (802.11a_5280MHz)
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Limit1 : FCC15.209 3m, below 1GHz:QP, above 1GHz:PK

Engineer : Hikaru Shirasawa



No.	Freq. [MHz]	Reading	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result	Limit	Margin	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<QP> [dBuV]				<QP> [dBuV/m]	<QP> [dB]						
1	62.613	48.4	8.0	6.8	32.1	31.1	40.0	8.9	Hori	351	104	BC	
2	665.966	35.1	19.8	9.6	31.9	32.6	46.0	13.4	Hori	100	197	LP	
3	737.288	37.6	20.4	9.8	31.6	36.2	46.0	9.8	Hori	144	70	LP	
4	921.640	35.2	22.1	10.3	30.8	36.8	46.0	9.2	Hori	100	143	LP	
5	46.078	47.8	12.9	6.7	32.1	35.3	40.0	4.7	Vert.	100	195	BC	
6	92.161	55.5	8.6	7.1	32.1	39.1	43.5	4.4	Vert.	100	99	BC	
7	184.320	43.5	16.1	7.7	32.0	35.3	43.5	8.2	Vert.	100	142	BC	

Calculation:Result [dBuV/m] =Reading [dBuV] +Ant.Fac [dB/m] +Loss (Cable+ATT) [dB] -Gain (AMP) [dB]
Ant.Type=BC:Biconical Antenna, LP:Logperiodic Antenna, SHA**:Horn Antenna

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UL Japan, Inc. Shonan EMC Lab. No.3 Semi-Anechoic Chamber
Date : 2010/01/13

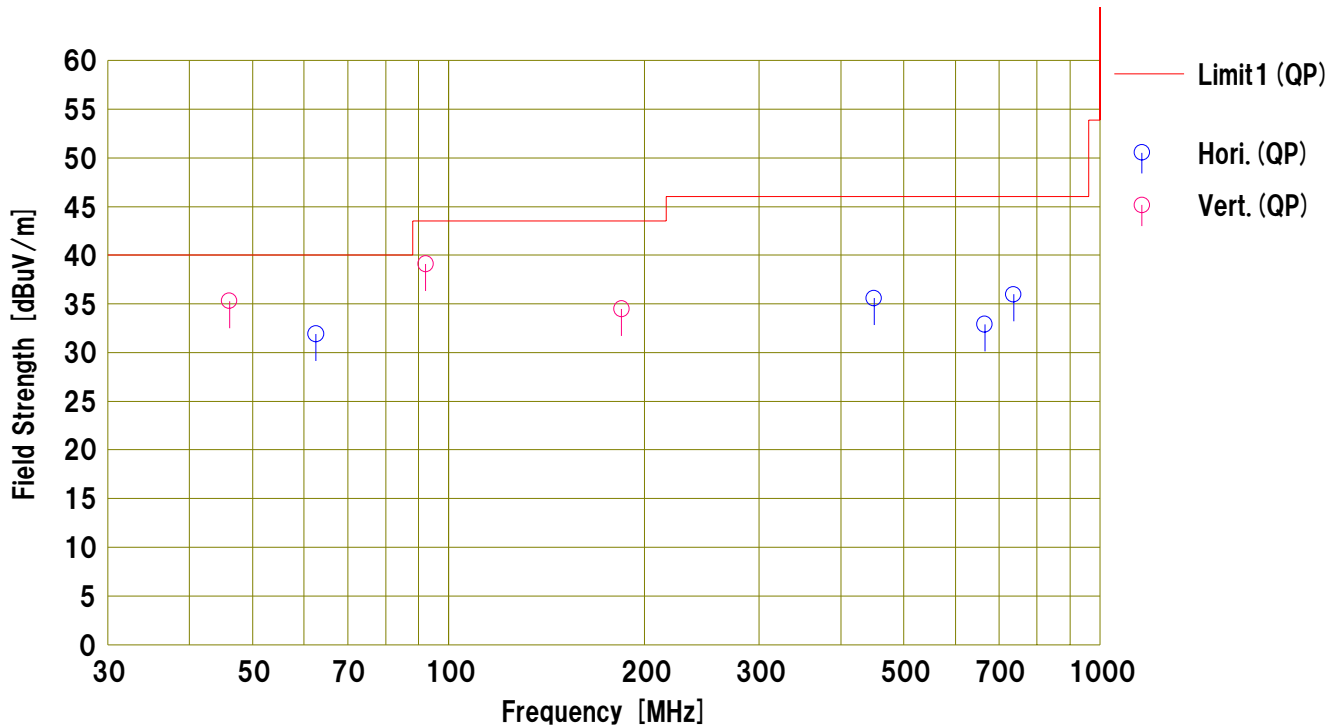
Company : RICOH COMPANY LTD
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Model No. : Aficio SP C431DN
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No.	Freq. [MHz]	Reading	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result	Limit	Margin	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		<QP> [dBuV]				<QP> [dBuV/m]	<QP> [dB]						
1	62.584	49.2	8.0	6.8	32.1	31.9	40.0	8.1	Hori	355	88	BC	
2	449.913	41.9	16.7	8.9	31.9	35.6	46.0	10.4	Hori	100	189	LP	
3	665.925	35.4	19.8	9.6	31.9	32.9	46.0	13.1	Hori	100	197	LP	
4	737.285	37.4	20.4	9.8	31.6	36.0	46.0	10.0	Hori	142	72	LP	
5	46.082	47.8	12.9	6.7	32.1	35.3	40.0	4.7	Vert.	100	195	BC	
6	92.157	55.5	8.6	7.1	32.1	39.1	43.5	4.4	Vert.	100	108	BC	
7	184.320	42.7	16.1	7.7	32.0	34.5	43.5	9.0	Vert.	100	144	BC	

DATA OF RADIATION TEST (Above 1GHz)

***used conversion formula**

Company : RICOH COMPANY LTD. Equipment : Color Laser Printer Model No. : Aficio SP C431DN Serial No. : S9491117004 Power : AC120V/60Hz Mode : Transmitting (802.11a 5180MHz)	UL Japan, Inc. Shonan NO.3 Semi Anechoic Chamber Report No. : 30CE0005-SH-01-C-R2 Regulation : FCC Part15E Section 15.407 Test Distance : 1-10GHz: 3m, 10GHz-40GHz: 1m Date : 2010/1/14 2010/1/15 Temperature : 19deg.C 20deg.C Humidity : 26% 25%
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ENGINEER : Hikaru Shirasawa

No.	FREQ [MHz]	Electric Field Strength (After Factor Calculation)		Result (EIRP)		LIMIT [dBm]	MARGIN	
		HOR [dBuV/m]	VER	HOR	VER		HOR	VER
1	5150.00	54.0	55.1	-41.2	-40.1	-27.0	14.2	13.1
2	10360.00	53.9	50.7	-50.9	-54.1	-27.0	23.9	27.1
3	15540.00	47.7	46.5	-57.1	-58.3	-27.0	30.1	31.3
4	20720.00	40.7	39.5	-64.1	-65.3	-27.0	37.1	38.3

Sample Calculation :

1-10GHz:Result(EIRP[dBm])=10*LOG(({ (Electric Field Strength [V/m] * Distance:3[m]) ^ 2 } / 30) * 10^3)

10-40GHz:Result(EIRP[dBm])=10*LOG(({ (Electric Field Strength [V/m] * Distance:1[m]) ^ 2 } / 30) * 10^3)

DATA OF RADIATION TEST (Above 1GHz)

***used conversion formula**

Company : RICOH COMPANY LTD. Equipment : Color Laser Printer Model : Aficio SP C431DN Sample No. : S9491117004 Power : AC120V/60Hz Mode : Transmitting (802.11a 5200MHz)	UL Japan, Inc. Shonan NO.3 Semi Anechoic Chamber Report No. : 30CE0005-SH-01-C-R2 Regulation : FCC Part15E Section 15.407 Test Distance : 1-10GHz: 3m, 10GHz-40GHz: 1m Date : 2010/1/14 2010/1/15 Temperature : 19deg.C 20deg.C Humidity : 26% 25%
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ENGINEER : Hikaru Shirasawa

No.	FREQ [MHz]	Electric Field Strength (After Factor Calculation)		Result (EIRP)		LIMIT [dBm]	MARGIN	
		HOR [dBuV/m]	VER	HOR [dBm]	VER		HOR [dB]	VER
1	10400.00	51.5	55.6	-53.3	-49.2	-27.0	26.3	22.2
2	15600.00	47.5	47.4	-57.3	-57.4	-27.0	30.3	30.4
3	20800.00	41.8	39.8	-63.0	-65.0	-27.0	36.0	38.0

Sample Calculation :

1-10GHz:Result(EIRP[dBm])=10*LOG(({ (Electric Field Strength [V/m] * Distance:3[m]) ^ 2 } / 30) * 10^3)

10-40GHz:Result(EIRP[dBm])=10*LOG(({ (Electric Field Strength [V/m] * Distance:1[m]) ^ 2 } / 30) * 10^3)

DATA OF RADIATION TEST (Above 1GHz)

***used conversion formula**

Company : RICOH COMPANY LTD. Equipment : Color Laser Printer Model : Aficio SP C431DN Sample No. : S9491117004 Power : AC120V/60Hz Mode : Transmitting (802.11a 5240MHz)	UL Japan, Inc. Shonan NO.3 Semi Anechoic Chamber Report No. : 30CE0005-SH-01-C-R2 Regulation : FCC Part15E Section 15.407 Test Distance : 1-10GHz: 3m, 10GHz-40GHz: 1m Date : 2010/1/14 2010/1/15 Temperature : 19deg.C 20deg.C Humidity : 26% 25%
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ENGINEER : Hikaru Shirasawa

No.	FREQ [MHz]	Electric Field Strength (After Factor Calculation)		Result (EIRP)		LIMIT [dBm]	MARGIN	
		HOR [dBuV/m]	VER	HOR [dBm]	VER		HOR [dB]	VER
1	5350.00	54.7	53.8	-40.5	-41.4	-27.0	13.5	14.4
3	10480.00	48.3	56.3	-56.5	-48.5	-27.0	29.5	21.5
4	15720.00	47.0	47.0	-57.8	-57.8	-27.0	30.8	30.8
5	20960.00	39.2	40.0	-65.6	-64.8	-27.0	38.6	37.8

Sample Calculation :

1-10GHz:Result(EIRP[dBm])=10*LOG(({ (Electric Field Strength [V/m] * Distance:3[m]) ^ 2 } / 30) * 10^3)

10-40GHz:Result(EIRP[dBm])=10*LOG(({ (Electric Field Strength [V/m] * Distance:1[m]) ^ 2 } / 30) * 10^3)

DATA OF RADIATION TEST (Above 1GHz)

***used conversion formula**

Company : RICOH COMPANY LTD. Equipment : Color Laser Printer Model : Aficio SP C431DN Sample No. : S9491117004 Power : AC120V/60Hz Mode : Transmitting (802.11a 5260MHz)	UL Japan, Inc. Shonan NO.3 Semi Anechoic Chamber Report No. : 30CE0005-SH-01-C-R2 Regulation : FCC Part15E Section 15.407 Test Distance : 1-10GHz: 3m, 10GHz-40GHz: 1m Date : 2010/1/14 2010/1/15 Temperature : 19deg.C 20deg.C Humidity : 26% 25%
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ENGINEER : Hikaru Shirasawa

No.	FREQ [MHz]	Electric Field Strength (After Factor Calculation)		Result (EIRP)		LIMIT [dBm]	MARGIN	
		HOR [dBuV/m]	VER	HOR	VER		HOR	VER
1	5150.00	53.9	54.8	-41.3	-40.4	-27.0	14.3	13.4
2	10520.00	49.5	54.8	-55.3	-50.0	-27.0	28.3	23.0
3	15780.00	46.7	46.9	-58.1	-57.9	-27.0	31.1	30.9
4	21040.00	37.3	38.1	-67.5	-66.7	-27.0	40.5	39.7

Sample Calculation :

1-10GHz:Result(EIRP[dBm])=10*LOG(({ (Electric Field Strength [V/m] * Distance:3[m]) ^ 2 } / 30) * 10^3)

10-40GHz:Result(EIRP[dBm])=10*LOG(({ (Electric Field Strength [V/m] * Distance:1[m]) ^ 2 } / 30) * 10^3)

DATA OF RADIATION TEST (Above 1GHz)

***used conversion formula**

Company : RICOH COMPANY LTD. Equipment : Color Laser Printer Model : Aficio SP C431DN Sample No. : S9491117004 Power : AC120V/60Hz Mode : Transmitting (802.11a 5280MHz)	UL Japan, Inc. Shonan NO.3 Semi Anechoic Chamber Report No. : 30CE0005-SH-01-C-R2 Regulation : FCC Part15E Section 15.407 Test Distance : 1-10GHz: 3m, 10GHz-40GHz: 1m Date : 2010/1/14 2010/1/15 Temperature : 19deg.C 20deg.C Humidity : 26% 25%
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ENGINEER : Hikaru Shirasawa

No.	FREQ [MHz]	Electric Field Strength (After Factor Calculation)		Result (EIRP)		LIMIT [dBm]	MARGIN	
		HOR [dBuV/m]	VER	HOR	VER		HOR	VER
1	10560.00	51.5	48.1	-43.7	-47.1	-27.0	16.7	20.1
2	15840.00	44.9	44.6	-59.9	-60.2	-27.0	32.9	33.2
3	21120.00	36.3	37.3	-68.5	-67.5	-27.0	41.5	40.5

Sample Calculation :

1-10GHz:Result(EIRP[dBm])=10*LOG(({ (Electric Field Strength [V/m] * Distance:3[m]) ^ 2 } / 30) *10^3)

10-40GHz:Result(EIRP[dBm])=10*LOG(({ (Electric Field Strength [V/m] * Distance:1[m]) ^ 2 } / 30) *10^3)

DATA OF RADIATION TEST (Above 1GHz)

***used conversion formula**

Company : RICOH COMPANY LTD. Equipment : Color Laser Printer Model : Aficio SP C431DN Sample No. : S9491117004 Power : AC120V/60Hz Mode : Transmitting (802.11a 5320MHz)	UL Japan, Inc. Shonan NO.3 Semi Anechoic Chamber Report No. : 30CE0005-SH-01-C-R2 Regulation : FCC Part15E Section 15.407 Test Distance : 1-10GHz: 3m, 10GHz-40GHz: 1m Date : 2010/1/14 2010/1/15 Temperature : 19deg.C 20deg.C Humidity : 26% 25%
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ENGINEER : Hikaru Shirasawa

No.	FREQ [MHz]	Electric Field Strength (After Factor Calculation)		Result (EIRP)		LIMIT [dBm]	MARGIN	
		HOR [dBuV/m]	VER	HOR	VER		HOR	VER
1	5350.00	54.4	54.0	-40.8	-41.2	-27.0	13.8	14.2
2	10640.00	51.4	50.7	-53.4	-54.1	-27.0	26.4	27.1
3	15960.00	46.6	47.2	-58.2	-57.6	-27.0	31.2	30.6
4	21280.00	39.1	38.3	-65.7	-66.5	-27.0	38.7	39.5

Sample Calculation :

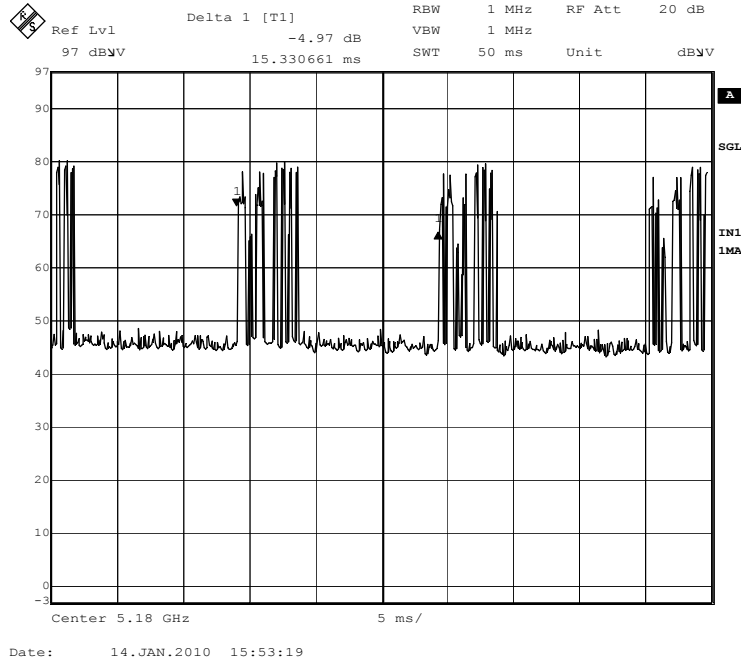
1-10GHz:Result(EIRP[dBm])=10*LOG(({ (Electric Field Strength [V/m] * Distance:3[m]) ^ 2 } / 30) *10^3)

10-40GHz:Result(EIRP[dBm])=10*LOG(({ (Electric Field Strength [V/m] * Distance:1[m]) ^ 2 } / 30) *10^3)

Duty Cycle

COMPANY : RICOH COMPANY LTD.
EQUIPMENT : Color Laser Printer
MODEL NUMBER: Aficio SP C431DN
SERIAL NUMBER: S9491117004
POWER : AC120V/60Hz

REPORT NO : 30CE0005-SH-01-C-R2
DATE : 2010/01/14
TEMP./HUMI : 19deg.C./26%
TEST MODE : Tx IEEE802.11a 5180MHz
ENGINEER : Hikaru Shirasawa



Duty Cycle: 15.331ms

AV Detector VBW: $1000 / 15.331\text{ms} = 65.23\text{Hz} \rightarrow 100\text{Hz}$

- * All the measured noise was pulse emission.
- * Duty cycle was within 100msec.

This purpose of the Duty Cycle calculation measures the pulse timing that we ensure Spectrum Analyzer can detect the pulse emission correctly. Therefore, If that pulse emission has the intervals during which the transmitter is off for the burst rate, we need to avoid the overlooking at the average value measurement as the similarly when the pulse is less than 20Hz. So if pulse cycle is every 10 msec, we set VBW=100Hz(=1000/10) in order not to overlook a pulse unexpectedly.

APPENDIX 3 Test Instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
SAF-03	Pre Amplifier	SONOMA	310N	290213	RE	2009/02/13 * 12
SAT6-05	Attenuator	JFW	50HF-006N	-	RE	2009/02/13 * 12
SBA-03	Biconical Antenna	Schwarzbeck	BBA9106	91032666	RE	2009/03/20 * 12
SCC-C1/C2/C3/C4/C5/C10/SRSE-03	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/141PE/NS4906	-/0901-271(RF Selector)	RE	2009/04/06 * 12
SLA-03	Logperiodic Antenna	Schwarzbeck	UHALP9108A	UHALP 9108-A0901	RE	2009/03/20 * 12
SOS-05	Humidity Indicator	A&D	AD-5681	4062518	RE	2009/02/04 * 12
STR-02	Test Receiver	Rohde & Schwarz	ESCI	100575	RE	2009/07/24 * 12
SJM-03	Measure	KOMELON	KMC-36	-	RE/CE	-
SAEC-03(NSA)	Semi-Anechoic Chamber	TDK	SAEC-03(NSA)	3	RE	2009/09/18 * 12
COTS-SEMI-1	EMI Software	TSJ	TEPTO-DV	-	RE/CE	-
SAF-06	Pre Amplifier	TOYO Corporation	TPA0118-36	1440491	RE	2009/03/26 * 12
SCC-G03	Coaxial Cable	Suhner	SUCOFLEX 104A	46499/4A	RE	2009/04/10 * 12
SCC-G23	Coaxial Cable	Suhner	SUCOFLEX 104	297342/4	RE	2009/05/27 * 12
SHA-03	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-739	RE	2009/08/23 * 12
STR-03	Test Receiver	Rohde & Schwarz	ESI40	100054/040	RE/CE	2009/04/08 * 12
SAF-09	Pre Amplifier	TOYO Corporation	HAP18-26W	00000018	RE	2009/03/27 * 12
SAF-10	Pre Amplifier	TOYO Corporation	HAP26-40W	00000010	RE	2009/06/29 * 12
SHA-05	Horn Antenna	ETS LINDGREN	3160-09	LM4210	RE	2009/04/09 * 12
SHA-06	Horn Antenna	ETS LINDGREN	3160-10	LM3459	RE	2009/04/30 * 12
SFL-02	Highpass Filter	MICRO-TRONICS	HPM50111	051	RE	2009/12/04 * 12
SFL-03	Highpass Filter	MICRO-TRONICS	HPM50112	028	RE	2009/12/04 * 12
SAT10-04	Attenuator(above1GHz)	Agilent	8493C-010	74863	RE	2009/03/24 * 12
SAT10-05	Attenuator(above1GHz)	Agilent	8493C-010	74864	RE	2009/03/24 * 12
SCC-G18	Coaxial Cable	Suhner	SUCOFLEX 104A	46292/4A	RE	2009/03/24 * 12
SCC-G19	Coaxial Cable	Suhner	SUCOFLEX 102A	1188/2A	RE	2009/03/13 * 12
SCC-C9/C10/SRSE-03	Coaxial Cable&RF Selector	Suhner/Suhner/TOYO	RG223U/141PE/NS4906	-/0901-271(RF Selector)	CE	2009/04/06 * 12
SLS-05	LISN	Rohde & Schwarz	ENV216	100516	CE(AE)	2009/02/25 * 12
SOS-06	Humidity Indicator	A&D	AD-5681	4062118	CE	2009/02/04 * 12
STM-05	Terminator	TME	CT-01 BP	-	CE	2010/01/08 * 12
SHF-02	Highpass Filter	Rohde & Schwarz	EZ-25	100022	CE	2009/03/13 * 12
SCC-03	Coaxial Cable	Fujikura	5D2W	-	CE	2009/06/12 * 12
SLS-07	LISN	Schwarzbeck	NSLK8126	8126441	CE(EUT)	2009/04/02 * 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 traceable calibrations . Each calibration is traceable to the national or international standards .

Test Item :

CE: Conducted emission ,

RE: Radiated emission ,

APPENDIX 4: Similar model description

1.model difference specification

Model (RICOH)	Print speed/minutes	HDD Unit
Aficio SP C430DN	35	Option
Aficio SP C431DN	40	Standard mounting

Print speed/minutes are A4 size print.
 The difference is printing speed and HDD Unit as above.

2. model name by brand

Model (RICOH)	Brand name	OEM model
Aficio SP C430DN	Nashuatec	SP C430DN
	Rex-Rotary	SP C430DN
	Gestetner	SP C430DN
	Lanier	SP C430DN
Aficio SP C431DN	Nashuatec	SP C431DN
	Rex-Rotary	SP C431DN
	Gestetner	SP C431DN
	Lanier	SP C431DN