Application for FCC Certificate
On Behalf of
Ricoh Co., Ltd

Printer

Model No.: SP C342DN, SP C340DN

Serial No.: Y195PC17022, Y185PC17015

FCC ID : BBP-PRSPC342DN1

Prepared For : Ricoh Co., Ltd
810, Shimoimaizumi Ebina City, Kanagawa,
243-0460 Japan

Prepared By : Audix Technology (Shanghai) Co., Ltd.
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Report No. : ACI-F16070
Date of Test : Feb 26 – Apr 02, 2016
Date of Report : Apr 07, 2016

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TEST REPORT FOR FCC CERTIFICATE

Applicant	:	Ricoh Co., Ltd
Manufacturer	:	Ricoh Co., Ltd
Factory	:	Shanghai Ricoh Digital Equipment Co., Ltd.
EUT Description	:	Printer
		(A) Model No. : SP C342DN , SP C340DN
		(B) Power Supply : 120V/60Hz

Test Procedure Used:

FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B OCTOBER 2015 AND ANSI C63.4-2014
(ICES-003 Issue 6 Jan. 2016 Class B)

The device described above is tested by Audix Technology (Shanghai) Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart B (Class B) limits both radiated and conducted emissions.

The test results are contained in this test report and Audix Technology (Shanghai) Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. This report shows that the EUT (M/N: Refer to Sec2.1) which was tested in 3m anechoic chamber Feb 26 – Apr 02, 2016 is technically compliance with the FCC official limits also.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Audix Technology (Shanghai) Co., Ltd.

This report contains data that are not covered by the NVLAP accreditation.

This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

Date of Test : Feb 26 – Apr 02, 2016 Date of Report : Apr 07, 2016

Producer : Hui Min Yan
HUI MIN YAN / Assistant

Review : Byron Wu
BYRON WU / Deputy Assistant Manager

AUDIX® For and on behalf of
Audix Technology (Shanghai) Co., Ltd.

Signatory :
Authorized Signature EMC BYRON KWO / Assistant General Manager

1 SUMMARY OF STANDARDS AND RESULTS

1.1 Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below:

Description of Test Item	Standard	Limits	Results
EMISSION			
Conducted Disturbance at the Mains Terminal	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2015 AND ANSI C63.4-2014 ICES-003 ISSUE 6 JAN. 2016	15.107(a) Class B	Pass
Radiated Disturbance	FCC RULES AND REGULATIONS PART 15 SUBPART B OCTOBER 2015 AND ANSI C63.4-2014 ICES-003 ISSUE 6 JAN. 2016	15.109(a) Class B	Pass

2 GENERAL INFORMATION

2.1 Description of Equipment Under Test

Description	:	Printer
Type of EUT	:	☐ Production ☑ Pre-product ☐ Pro-type
Model No.	:	SP C342DN, SP C340DN
Serial No.	:	Y195PC17022, Y185PC17015
Note	:	Declare that the difference between models SP C342DN and SP C340DN is Controller option and operation panel unit. SP C340DN equips with the 4-line-panel and SP C342DN equips with the touch-panel.
Rated Power	:	1300W
Highest working Frequency	:	3000MHz
Applicant	:	Ricoh Co., Ltd 810, Shimoimaizumi Ebina City, Kanagawa, 43-0460 Japan
Manufacturer	:	Ricoh Co., Ltd 810, Shimoimaizumi Ebina City, Kanagawa, 43-0460 Japan
Factory	:	Shanghai Ricoh Digital Equipment Co., Ltd. No.887 Jingang Road, Jinqiao Export Processing Zone, Pudong New Area, Shanghai, China

Remark:

The EUT is a Printer which input/output ports as follows:

Side Port:

(1) One LAN Port
: Connected with PC

(2) One USB1 Port
: Connected with PC

(3) One USB2 Port
: Connected with H-Disk

(4) One Option Port
: Connected with PC

Front Port:

(5) One USB3 Port
: Connected with Camera

Note: Option: NIC2, WIRELESS, IEEE1284

2.2 Peripherals

2.2.1 PC

Manufacturer	:	LENOVO
Model Number	:	E73s
Serial Number	:	PC0892JM
Certificate	:	C-Tick, FCC DoC, CE/EMC, VCCI

2.2.2 Keyboard

Manufacturer	:	Microsoft
Model Number	:	RT2300
Serial Number	:	7668200662248
Data Cable	:	Shielded, Detachable, 1.5m
Certificate	:	CE/EMC, FCC DoC, VCCI, MIC, C-Tick, BSMI

2.2.3 Mouse

Manufacturer	:	Microsoft
Model Number	:	RT2300
Serial Number	:	6965712071551
Data Cable	:	Shielded, Detachable, 1.5m.
Certificate	:	CE/EMC, FCC DoC, VCCI, MIC, C-Tick, BSMI

2.2.4 Hard Disk

Manufacturer	:	Tetasys
Model Number	:	F12
Serial Number	:	A010022-4860010X
Data Cable	:	Shielded, Detachable, 1.5m.
Certificate	:	CE, FCC DoC

2.2.5 LCD Monitor

Manufacturer	:	ASUS
Model Number	:	VE228
Power Cord	:	Unshielded, Detachable, 1.8m
Certificate	:	CE/EMC ,BSMI, FCC DOC,VCCI

2.2.6 Digital Camera

Manufacturer	:	RICOH
Model Number	:	AIR-AP1042N-P-K9
Serial Number	:	FGL1707S0RA
Data Cable	:	Shielded, Undetachable, 1.5m
Certificate	:	CE/EMC

2.3 Cable list

No.	Name	Length (m)	Cable Shield	Connector Shield	Remark
1	USB Cable	2.5m	Yes	Metal	
2	USB Cable	0.207m	Yes	Metal	NIC 2port
3	IEEE1284 Cable	3.0m	Yes	Metal	
4	LAN Cable	3.0m	No	Plastic	Cat 6
5	LAN Cable	3.0m	No	Plastic	Cat 6
6	LAN Cable	3.0m	No	Plastic	Cat 6
7	LAN Cable	3.0m	No	Plastic	Cat 5
8	Power Cable	2.0m	No	Plastic	

2.4 Description of Test Facility

Site Description : Sept. 17, 1998 file on
(Semi-Anechoic Chamber) Jan.15, 2015 Renewed
Federal Communications Commission
FCC Engineering Laboratory
7435 Oakland Mills Road
Columbia, MD 21046, USA

Name of Firm : Audix Technology (Shanghai) Co., Ltd.

Site Location : 3F 34Bldg 680 Guiping Rd,
Caohejing Hi-Tech Park,
Shanghai 200233, China

NVLAP Lab Code : 200371-0

2.5 Measurement Uncertainty

Conducted Emission Expanded Uncertainty: U = 3.4 dB
Radiated Emission Expanded Uncertainty (30-200MHz):
U = 4.6 dB (Horizontal)
U = 4.3 dB (Vertical)
Radiated Emission Expanded Uncertainty (200M-1GHz):
U = 4.5 dB (Horizontal)
U = 5.4 dB (Vertical)
Radiated Emission Expanded Uncertainty (Above 1GHz):
U = 5.1 dB

3 CONDUCTED EMISSION TEST

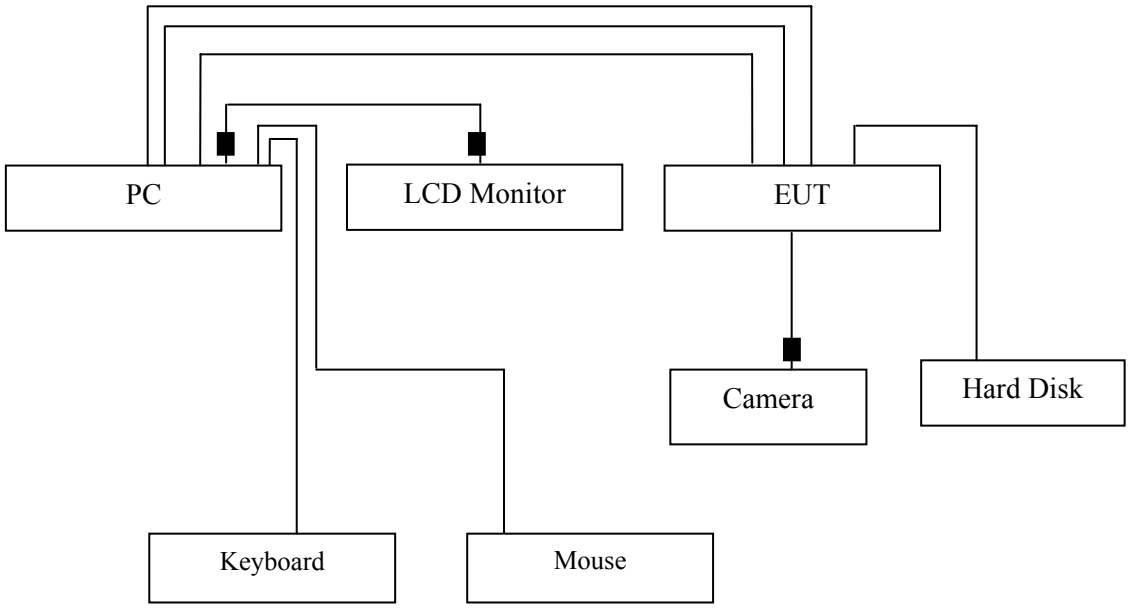
3.1 Test Equipment

The following test equipments are used during the conducted emission test in a shielded room:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	101302	Apr 27, 2015	Apr 26, 2016
2.	Artificial Mains Network (AMN)	R&S	ENV4200	100125	Jun 25, 2015	Jun 24, 2016
3.	Line Impedance Stabilization Network (LISN)	Kyoritsu	KNW-407	8-1280-5	Mar 20, 2016	Mar 19, 2017
4.	Balance Telecom ISN	TESEQ	ISN T8-Cat6	38893	Aug 12, 2015	Aug 11, 2016
5.	50Ω Terminator	Anritsu	BNC	001	Mar 20, 2016	Mar 19, 2017
6.	Software	Audix	e3	6.2009-1-15	--	--

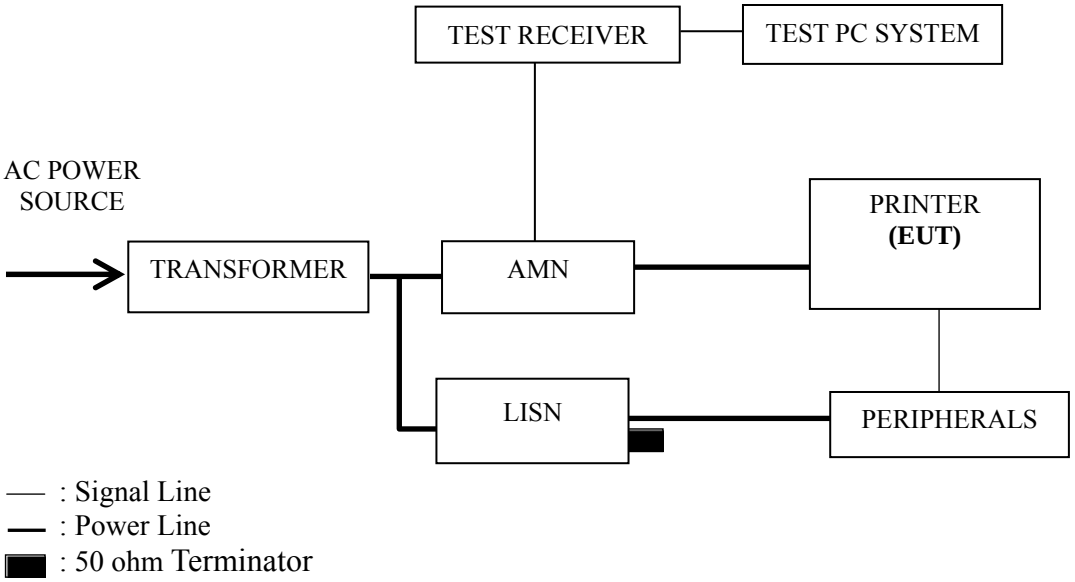
3.2 Block Diagram of Test Setup

3.2.1 EUT & Peripherals



■ : Ferrite core

3.2.2 Conducted Disturbance Test Setup



3.3 Conducted Emission Limit [FCC Part 15 Subpart B 15.107(a) (ICES-003 Issue 6)]

Frequency Range (MHz)	Limits dB (μV)	
	Quasi-peak	Average
0.15 ~ 0.5	66~56	56~46
0.5 ~ 5	56	46
5 ~ 30	60	50
NOTE 1 – The lower limit shall apply at the transition frequencies. NOTE 2 – The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz~0.50 MHz		

3.4 Test Configuration

The EUT (listed in Sec.2.1) and the peripherals (listed in Sec 2.2) were installed as shown on Sec.3.2 to meet FCC requirement and operating in a manner that tends to maximize its emission level in a normal application.

3.5 Operating Condition of EUT

3.5.1 Setup the EUT and peripherals as shown in Sec. 3.2.

3.5.2 Turn on the power of all equipments and the EUT.

3.5.3 Set the EUT on the test mode and then test.

3.6 Test Procedures

The EUT and peripherals were connected to the power mains through an Artificial Mains Network (AMN). This provided a 50 ohm coupling impedance for the measuring equipment.

Both sides of AC line (Line & Neutral) were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables were changed or manipulated according to ANSI C63.4:2014 during conducted emission test.

The bandwidth of R&S Test Receiver ESCI was set at 9 kHz.

The frequency range from 150 kHz to 30 MHz was checked.

The test modes were done on conducted disturbance test and all the test results are listed in Sec. 3.7.

3.7 Test Results

< PASS >

The frequency and amplitude of the highest conducted emission relative to the limit is reported. All emissions not reported below are too low against the prescribed limits.

M/N	Test Mode	Data Page
SP C342DN	Standby	P11
	NIC2(1000BASE) Print	P12
	PictBridge(Rear)	P13
	PictBridge(Front)	P14
	Media Print (SD)	P15
	Media Print (USB)	P16
	IEEE1284 Print + USB 2.0 Print+ NIC(1000BASE) Print	P17
	IEEE802.11n Print	P18
SP C340DN	IEEE802.11n Print	P19

NOTE 1 – Factor = Cable Loss + AMN Factor.
NOTE 2 – Emission Level = Meter Reading + Factor.
NOTE 3 – "QP" means "Quasi-Peak" values, "AV" means "Average" values.
NOTE 4 – The worst case is for SP C342DN (Test Mode: IEEE802.11n Print) test mode. The worst emission is detected at 0.197 MHz (Average Value) with corrected signal level of 46.10 dB (μV) (limit is 53.73 dB (μV)), when the Neutral of the EUT is connected to AMN.

EUT	:	Printer	Temperature :	22℃	
Model No.	:	SP C342DN	Humidity	:	48%RH
Test Mode	:	Standby	Date of Test :	Feb 26, 2016	

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	**0.198**	**43.30**	**10.52**	**53.82**	**63.69**	**9.87**	QP
	0.395	20.49	10.43	30.92	57.96	27.04	
	0.493	19.50	10.39	29.89	56.12	26.23	
	0.592	17.90	10.38	28.28	56.00	27.72	
	1.382	13.20	10.39	23.59	56.00	32.41	
	11.730	25.70	10.51	36.21	60.00	23.79	
	0.198	32.50	10.52	43.02	53.69	10.67	AV
	0.395	20.19	10.43	30.62	47.96	17.34	
	0.493	17.40	10.39	27.79	46.12	18.33	
	0.592	17.10	10.38	27.48	46.00	18.52	
	1.382	10.10	10.39	20.49	46.00	25.51	
	11.730	21.20	10.51	31.71	50.00	18.29	
Neutral	0.195	39.60	10.51	50.11	63.81	13.70	QP
	0.394	21.19	10.41	31.60	57.97	26.37	
	0.493	19.20	10.37	29.57	56.11	26.54	
	0.592	15.40	10.36	25.76	56.00	30.24	
	1.082	14.80	10.37	25.17	56.00	30.83	
	9.437	26.19	10.56	36.75	60.00	23.25	
	0.195	21.30	10.51	31.81	53.81	22.00	AV
	0.394	21.09	10.41	31.50	47.97	16.47	
	0.493	16.50	10.37	26.87	46.11	19.24	
	0.592	15.10	10.36	25.46	46.00	20.54	
	1.082	10.60	10.37	20.97	46.00	25.03	
	9.437	21.69	10.56	32.25	50.00	17.75	

TEST ENGINEER: SEVEN LU

EUT	:	Printer	Temperature :	22℃	
Model No.	:	SP C342DN	Humidity	:	48%RH
Test Mode	:	NIC2(1000BASE) Print	Date of Test	:	Feb 26, 2016

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.166	42.49	10.57	53.06	65.15	12.09	QP
	0.200	35.00	10.52	45.52	63.63	18.11	
	0.295	27.50	10.46	37.96	60.38	22.42	
	0.593	26.90	10.38	37.28	56.00	18.72	
	1.718	21.59	10.41	32.00	56.00	24.00	
	10.550	30.40	10.50	40.90	60.00	19.10	
	0.166	16.19	10.57	26.76	55.15	28.39	AV
	0.200	**34.80**	**10.52**	**45.32**	**53.63**	**8.31**	
	0.295	27.20	10.46	37.66	50.38	12.72	
	0.593	26.10	10.38	36.48	46.00	9.52	
	1.718	15.09	10.41	25.50	46.00	20.50	
	10.550	25.30	10.50	35.80	50.00	14.20	
Neutral	0.197	35.50	10.50	46.00	63.72	17.72	QP
	0.252	23.91	10.46	34.37	61.69	27.32	
	0.592	24.20	10.36	34.56	56.00	21.44	
	2.404	17.60	10.42	28.02	56.00	27.98	
	3.790	20.70	10.45	31.15	56.00	24.85	
	9.772	30.70	10.56	41.26	60.00	18.74	
	0.197	33.10	10.50	43.60	53.72	10.12	AV
	0.252	3.01	10.46	13.47	51.69	38.22	
	0.592	23.00	10.36	33.36	46.00	12.64	
	2.404	12.30	10.42	22.72	46.00	23.28	
	3.790	15.20	10.45	25.65	46.00	20.35	
	9.772	25.20	10.56	35.76	50.00	14.24	

TEST ENGINEER: SEVEN LU

EUT	:	Printer	Temperature :	22℃	
Model No.	:	SP C342DN	Humidity	:	48%RH
Test Mode	:	PictBridge(Rear)	Date of Test	:	Feb 26, 2016

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.170	38.80	10.56	49.36	64.94	15.58	QP
	0.206	30.50	10.52	41.02	63.36	22.34	
	0.254	23.11	10.48	33.59	61.64	28.05	
	0.592	26.90	10.38	37.28	56.00	18.72	
	1.083	20.90	10.38	31.28	56.00	24.72	
	11.210	28.10	10.50	38.60	60.00	21.40	
	0.170	15.30	10.56	25.86	54.94	29.08	AV
	0.206	15.00	10.52	25.52	53.36	27.84	
	0.254	3.01	10.48	13.49	51.64	38.15	
	0.592	**25.10**	**10.38**	**35.48**	**46.00**	**10.52**	
	1.083	18.80	10.38	29.18	46.00	16.82	
	11.210	22.90	10.50	33.40	50.00	16.60	
Neutral	0.164	39.90	10.56	50.46	65.24	14.78	QP
	0.199	34.20	10.50	44.70	63.66	18.96	
	0.296	26.60	10.44	37.04	60.35	23.31	
	0.592	24.00	10.36	34.36	56.00	21.64	
	2.270	24.90	10.42	35.32	56.00	20.68	
	10.620	31.19	10.58	41.77	60.00	18.23	
	0.164	18.30	10.56	28.86	55.24	26.38	AV
	0.199	31.90	10.50	42.40	53.66	11.26	
	0.296	26.20	10.44	36.64	50.35	13.71	
	0.592	23.20	10.36	33.56	46.00	12.44	
	2.270	18.60	10.42	29.02	46.00	16.98	
	10.620	25.69	10.58	36.27	50.00	13.73	

TEST ENGINEER: SEVEN LU

EUT	:	Printer	Temperature :	22℃	
Model No.	:	SP C342DN	Humidity	:	48%RH
Test Mode	:	PictBridge(Front)	Date of Test	:	Feb 26, 2016

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.180	39.10	10.54	49.64	64.48	14.84	QP
	0.218	31.30	10.51	41.81	62.91	21.10	
	0.267	21.30	10.48	31.78	61.21	29.43	
	0.494	27.60	10.39	37.99	56.11	18.12	
	1.973	21.90	10.41	32.31	56.00	23.69	
	10.980	29.40	10.50	39.90	60.00	20.10	
	0.180	14.70	10.54	25.24	54.48	29.24	AV
	0.218	16.80	10.51	27.31	52.91	25.60	
	0.267	4.00	10.48	14.48	51.21	36.73	
	0.494	**27.40**	**10.39**	**37.79**	**46.11**	**8.32**	
	1.973	15.30	10.41	25.71	46.00	20.29	
	10.980	23.90	10.50	34.40	50.00	15.60	
Neutral	0.188	35.50	10.52	46.02	64.15	18.13	QP
	0.227	28.30	10.48	38.78	62.54	23.76	
	0.281	19.50	10.45	29.95	60.80	30.85	
	0.592	24.20	10.36	34.56	56.00	21.44	
	2.269	24.80	10.42	35.22	56.00	20.78	
	10.690	30.39	10.58	40.97	60.00	19.03	
	0.188	13.30	10.52	23.82	54.15	30.33	AV
	0.227	3.80	10.48	14.28	52.54	38.26	
	0.281	6.60	10.45	17.05	50.80	33.75	
	0.592	23.30	10.36	33.66	46.00	12.34	
	2.269	18.60	10.42	29.02	46.00	16.98	
	10.690	25.29	10.58	35.87	50.00	14.13	

TEST ENGINEER: SEVEN LU

EUT	:	Printer	Temperature :	22℃	
Model No.	:	SP C342DN	Humidity	:	48%RH
Test Mode	:	Media Print (SD)	Date of Test	:	Feb 26, 2016

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.167	40.30	10.56	50.86	65.11	14.25	QP
	0.198	36.30	10.52	46.82	63.70	16.88	
	0.245	26.30	10.49	36.79	61.92	25.13	
	0.592	26.60	10.38	36.98	56.00	19.02	
	3.533	20.20	10.45	30.65	56.00	25.35	
	10.610	30.20	10.50	40.70	60.00	19.30	
	0.167	15.80	10.56	26.36	55.11	28.75	AV
	0.198	**34.20**	**10.52**	**44.72**	**53.70**	**8.98**	
	0.245	5.00	10.49	15.49	51.92	36.43	
	0.592	26.40	10.38	36.78	46.00	9.22	
	3.533	15.30	10.45	25.75	46.00	20.25	
	10.610	25.00	10.50	35.50	50.00	14.50	
Neutral	0.198	33.90	10.50	44.40	63.71	19.31	QP
	0.297	26.60	10.44	37.04	60.34	23.30	
	0.593	24.90	10.36	35.26	56.00	20.74	
	2.270	24.10	10.42	34.52	56.00	21.48	
	4.736	23.90	10.47	34.37	56.00	21.63	
	10.820	30.90	10.58	41.48	60.00	18.52	
	0.198	33.20	10.50	43.70	53.71	10.01	AV
	0.297	26.40	10.44	36.84	50.34	13.50	
	0.593	24.30	10.36	34.66	46.00	11.34	
	2.270	18.30	10.42	28.72	46.00	17.28	
	4.736	17.20	10.47	27.67	46.00	18.33	
	10.820	24.70	10.58	35.28	50.00	14.72	

TEST ENGINEER: SEVEN LU

EUT	:	Printer	Temperature :	22℃	
Model No.	:	SP C342DN	Humidity	:	48%RH
Test Mode	:	Media Print (USB)	Date of Test	:	Feb 26, 2016

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.165	45.69	10.57	56.26	65.21	8.95	QP
	0.199	36.00	10.52	46.52	63.65	17.13	
	0.296	28.10	10.46	38.56	60.35	21.79	
	0.591	26.90	10.38	37.28	56.00	18.72	
	1.976	19.20	10.41	29.61	56.00	26.39	
	10.800	29.50	10.50	40.00	60.00	20.00	
	0.165	18.29	10.57	28.86	55.21	26.35	AV
	0.199	**35.10**	**10.52**	**45.62**	**53.65**	**8.03**	
	0.296	28.00	10.46	38.46	50.35	11.89	
	0.591	26.30	10.38	36.68	46.00	9.32	
	1.976	12.50	10.41	22.91	46.00	23.09	
	10.800	24.60	10.50	35.10	50.00	14.90	
Neutral	0.173	37.49	10.55	48.04	64.82	16.78	QP
	0.199	33.70	10.50	44.20	63.64	19.44	
	0.296	26.60	10.44	37.04	60.36	23.32	
	0.594	22.50	10.36	32.86	56.00	23.14	
	2.289	23.70	10.42	34.12	56.00	21.88	
	10.640	30.59	10.58	41.17	60.00	18.83	
	0.173	10.79	10.55	21.34	54.82	33.48	AV
	0.199	33.00	10.50	43.50	53.64	10.14	
	0.296	26.40	10.44	36.84	50.36	13.52	
	0.594	21.90	10.36	32.26	46.00	13.74	
	2.289	18.90	10.42	29.32	46.00	16.68	
	10.640	25.29	10.58	35.87	50.00	14.13	

TEST ENGINEER: SEVEN LU

EUT	:	Printer	Temperature :	22℃	
Model No.	:	SP C342DN	Humidity	:	48%RH
Test Mode	:	IEEE1284 Print + USB2.0 Print+ NIC(1000BASE) Print	Date of Test	:	Feb 26, 2016

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.242	24.70	10.49	35.19	62.03	26.84	QP
	0.297	27.90	10.46	38.36	60.32	21.96	
	0.592	26.80	10.38	37.18	56.00	18.82	
	0.890	24.90	10.38	35.28	56.00	20.72	
	4.185	23.30	10.47	33.77	56.00	22.23	
	10.630	30.50	10.50	41.00	60.00	19.00	
	0.242	4.50	10.49	14.99	52.03	37.04	AV
	0.297	27.00	10.46	37.46	50.32	12.86	
	0.592	**26.60**	**10.38**	**36.98**	**46.00**	**9.02**	
	0.890	23.30	10.38	33.68	46.00	12.32	
	4.185	16.80	10.47	27.27	46.00	18.73	
	10.630	24.90	10.50	35.40	50.00	14.60	
Neutral	0.166	40.40	10.56	50.96	65.16	14.20	QP
	0.198	35.30	10.50	45.80	63.70	17.90	
	0.296	26.50	10.44	36.94	60.35	23.41	
	0.592	24.10	10.36	34.46	56.00	21.54	
	4.220	22.60	10.46	33.06	56.00	22.94	
	10.370	31.51	10.56	42.07	60.00	17.93	
	0.166	16.90	10.56	27.46	55.16	27.70	AV
	0.198	32.50	10.50	43.00	53.70	10.70	
	0.296	26.20	10.44	36.64	50.35	13.71	
	0.592	23.60	10.36	33.96	46.00	12.04	
	4.220	17.30	10.46	27.76	46.00	18.24	
	10.370	26.21	10.56	36.77	50.00	13.23	

TEST ENGINEER: SEVEN LU

EUT	:	Printer	Temperature :	22℃	
Model No.	:	SP C342DN	Humidity	:	48%RH
Test Mode	:	IEEE802.11n Print	Date of Test	:	Apr 02, 2016

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.199	34.40	10.52	44.92	63.65	18.73	QP
	0.252	22.21	10.48	32.69	61.69	29.00	
	0.303	18.70	10.46	29.16	60.15	30.99	
	0.592	24.20	10.38	34.58	56.00	21.42	
	4.757	21.40	10.48	31.88	56.00	24.12	
	13.060	29.10	10.53	39.63	60.00	20.37	
	0.199	32.90	10.52	43.42	53.65	10.23	AV
	0.252	2.11	10.48	12.59	51.69	39.10	
	0.303	11.10	10.46	21.56	50.15	28.59	
	0.592	23.50	10.38	33.88	46.00	12.12	
	4.757	16.00	10.48	26.48	46.00	19.52	
	13.060	23.80	10.53	34.33	50.00	15.67	
Neutral	0.197	36.90	10.50	47.40	63.73	16.33	QP
	0.217	28.30	10.49	38.79	62.95	24.16	
	0.296	27.90	10.44	38.34	60.35	22.01	
	0.593	26.50	10.36	36.86	56.00	19.14	
	2.051	18.00	10.41	28.41	56.00	27.59	
	13.340	26.50	10.63	37.13	60.00	22.87	
	0.197	**35.60**	**10.50**	**46.10**	**53.73**	**7.63**	AV
	0.217	15.50	10.49	25.99	52.95	26.96	
	0.296	27.00	10.44	37.44	50.35	12.91	
	0.593	26.00	10.36	36.36	46.00	9.64	
	2.051	15.40	10.41	25.81	46.00	20.19	
	13.340	21.30	10.63	31.93	50.00	18.07	

EUT	:	Printer	Temperature :	22℃	
Model No.	:	SP C340DN	Humidity	:	48%RH
Test Mode	:	IEEE802.11n Print	Date of Test	:	Feb 26, 2016

Test Line	Frequency (MHz)	Meter Reading dB(μV)	Factor (dB)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)	Remark
Line	0.200	39.00	10.52	49.52	63.61	14.09	QP
	0.500	33.40	10.39	43.79	56.01	12.22	
	0.598	33.30	10.38	43.68	56.00	12.32	
	0.897	33.90	10.38	44.28	56.00	11.72	
	3.730	29.31	10.45	39.76	56.00	16.24	
	8.396	33.90	10.48	44.38	60.00	15.62	
	0.200	38.50	10.52	49.02	53.61	4.59	AV
	0.500	32.00	10.39	42.39	46.01	3.62	
	0.598	**32.40**	**10.38**	**42.78**	**46.00**	**3.22**	
	0.897	30.00	10.38	40.38	46.00	5.62	
	3.730	22.81	10.45	33.26	46.00	12.74	
	8.396	28.60	10.48	39.08	50.00	10.92	
Neutral	0.174	37.30	10.54	47.84	64.76	16.92	QP
	0.213	28.90	10.49	39.39	63.10	23.71	
	0.501	29.30	10.37	39.67	56.00	16.33	
	0.597	30.80	10.36	41.16	56.00	14.84	
	0.899	29.60	10.37	39.97	56.00	16.03	
	8.919	38.91	10.54	49.45	60.00	10.55	
	0.174	13.80	10.54	24.34	54.76	30.42	AV
	0.213	9.00	10.49	19.49	53.10	33.61	
	0.501	29.00	10.37	39.37	46.00	6.63	
	0.597	29.30	10.36	39.66	46.00	6.34	
	0.899	26.20	10.37	36.57	46.00	9.43	
	8.919	33.61	10.54	44.15	50.00	5.85	

TEST ENGINEER: SEVEN LU

4 RADIATED EMISSION TEST

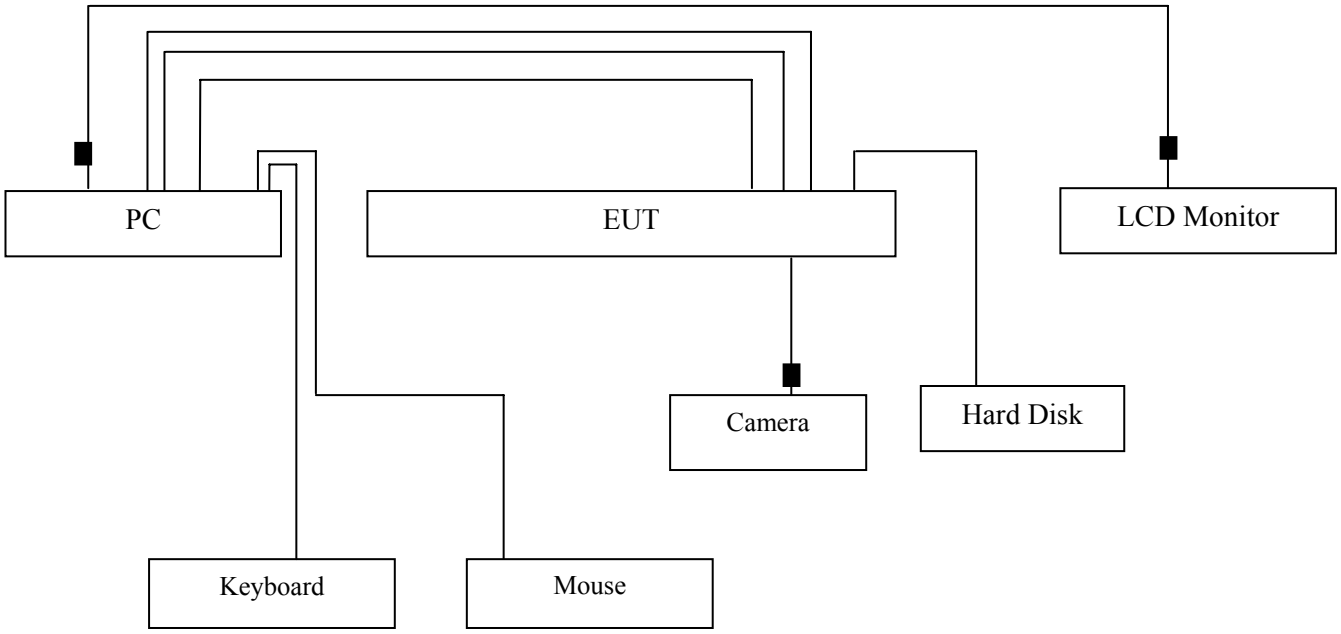
4.1 Test Equipment

The following test equipments are used during the radiated emission test in a semi-anechoic chamber:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESCI	101302	May 07, 2015	May 06, 2016
2.	Preamplifier	Agilent	8447D	2944A10548	Apr 26, 2015	Apr 25, 2016
3.	Preamplifier	HP	8449B	3008A00864	Mar 20, 2016	Mar 19, 2017
4.	Bi-log Antenna	TESEQ	CBL6112D	23193	May 24, 2015	May 23, 2016
5.	Horn Antenna	EMCO	3115	9607-4878	Jun 03, 2015	Jun 02, 2016
6.	Spectrum	Agilent	N9010A	MY52221182	Jun 12, 2015	Jun 12, 2016
7.	50Ω Coaxial Switch	Anritsu	MP59B	6200426390	Mar 18, 2016	Sep 17, 2016
8.	Software	Audix	e3	6.2007-9-10	--	--

4.2 Block Diagram of Test Setup

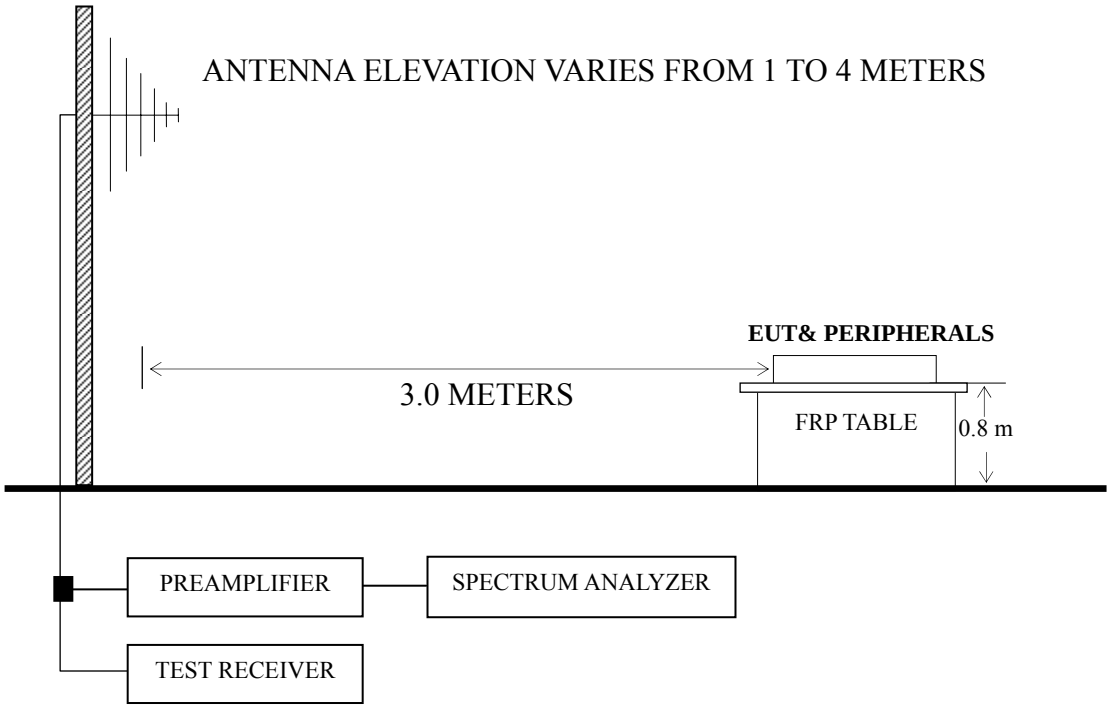
4.2.1 EUT & Peripherals



■ : Ferrite core

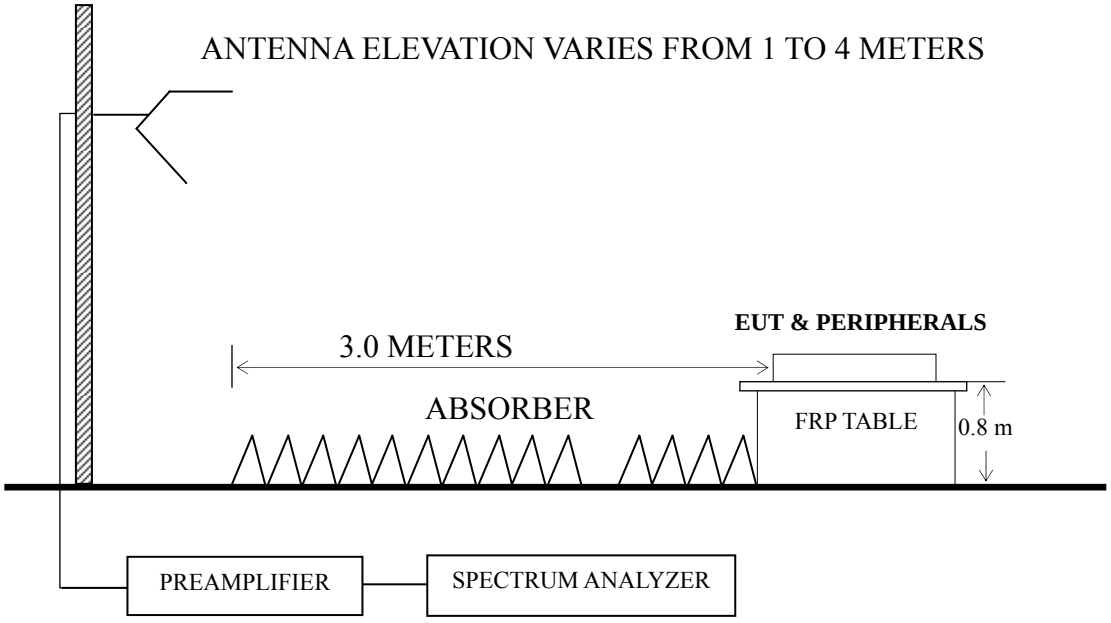
4.2.2 Radiated emission test setup

4.2.2.1 Below 1GHz



■ : 50 ohm Coaxial Switch

4.2.2.2 Above 1GHz



4.3 Radiated Emission Limit [FCC Part 15 Subpart B 15.109(a) ICES-003 Issue 6]

Frequency (MHz)	Distance (m)	Field strength limits	
		(μV/m)	dB (μV/m)
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
Above 960	3	500	54.0

NOTE 1 - Emission Level dB (μV/m) = 20 log Emission Level (μV/m)
NOTE 2 - The tighter limit applies at the band edges.
NOTE 3 - Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
NOTE 4 - The limits shown are based on Quasi-peak value detector.
NOTE 5 - Above 1 GHz, the limit on peak emission is 20 dB above the maximum permitted average emission limit applicable to the EUT.

4.4 Test Configuration

The configuration of the EUT and peripherals are same as those used in conducted emission test.

Please refer to Sec.3.4.

4.5 Operating Condition of EUT

Same as conducted emission test which is listed in Sec.3.5, except for the test setup replaced by Sec.4.2.

4.6 Test Procedures

The EUT and peripherals were placed on a FRP turntable that is 0.8 meter above ground. The FRP turntable rotated 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna, which was mounted on an antenna tower. Broadband antenna (Calibrated Bilog Antenna) was used as receiving antenna. The antenna moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarizations of the antenna were set on measurement. In order to find the maximum emission, all of the interference cables were manipulated according to ANSI C63.4:2014 requirements during radiated emission test.

The I.F. bandwidth of Test Receiver R&S ESCI was set at 120 kHz and The Spectrum Agilent N9010A was set at 1MHz above 1GHz.

The frequency range from 30 MHz to 15 GHz was checked.

The test modes were done on radiated disturbance test and all the test results are listed in Sec.4.7.

4.7 Test Results

<PASS>

The frequency and amplitude of the highest radiated emission relative the limit is reported. All the emissions not reported below are too low against the FCC limit.

Frequency	M/N	Test Mode	Data Page
30MHz~15GHz	SP C342DN	Standby	P24 – P25
		NIC2(1000BASE) Print	P26 – P27
		PictBridge(Rear)	P28 – P29
		PictBridge(Front)	P30 – P31
		Media Print (SD)	P32 – P33
		Media Print (USB)	P34 – P35
		IEEE1284 Print + USB 2.0 Print+ NIC(1000BASE) Ping	P36 – P37
		IEEE802.11n Print	P38 – P39
	SP C340DN	IEEE802.11n Print	P40 – P41

NOTE 1 – Emission Level = Antenna Factor + Cable Loss + Meter Reading. (< 1GHz);
Emission Level = Antenna Factor + Cable Loss – Preamp Factor + Meter Reading. (> 1GHz)

NOTE 2 – All readings are Quasi-Peak values below or equal to 1GHz, Peak and Average values above 1GHz.

NOTE 3 – 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

NOTE 4 – The worst case is for SP C342DN (Test Mode: IEEE802.11n Print) test mode. The worst emission at horizontal polarization was detected at 155.910 MHz with corrected signal level of 37.19 dB (μV/m) (limit is 43.50 dB (μV/m)), when the antenna was 1.30 m height and the turntable was at 38°. The worst emission at vertical polarization was detected at 31.040 MHz with corrected signal level of 35.89 dB (μV/m) (limit is 40.00 dB (μV/m)), when the antenna was 1.00 m height and the turntable was at 203°.

EUT	:	Printer	Temperature :	22℃
Model No.	:	SP C342DN	Humidity	:	60%RH
Test Mode	:	Standby	Date of Test :	Feb 29, 2016

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	137.670	45.99	12.54	1.56	--	31.97	43.50	11.53	QP
	149.310	46.99	11.57	1.63	--	32.06	43.50	11.44	
	162.890	45.89	11.21	1.73	--	30.73	43.50	12.77	
	291.900	43.06	13.60	2.52	--	31.77	46.00	14.23	
	747.800	39.92	20.10	3.62	--	35.13	46.00	10.87	
	798.240	**39.35**	**20.57**	**3.68**	**--**	**35.46**	**46.00**	**10.54**	
	1280.000	48.77	24.77	3.63	36.00	41.17	74.00	32.83	PK
	2834.000	44.32	29.83	5.54	35.19	44.50	74.00	29.50	
	3002.000	45.85	30.50	5.83	35.20	46.98	74.00	27.02	
	4038.000	44.18	32.86	5.95	34.28	48.71	74.00	25.29	
	5998.000	37.28	35.10	8.45	34.10	46.73	74.00	27.27	
	7958.000	35.34	38.56	9.69	36.06	47.53	74.00	26.47	
	1280.000	35.39	24.77	3.63	36.00	27.79	54.00	26.21	AV
	2834.000	30.73	29.83	5.54	35.19	30.91	54.00	23.09	
	3002.000	30.20	30.50	5.83	35.20	31.33	54.00	22.67	
	4038.000	30.85	32.86	5.95	34.28	35.38	54.00	18.62	
	5998.000	24.33	35.10	8.45	34.10	33.78	54.00	20.22	
	7958.000	23.03	38.56	9.69	36.06	35.22	54.00	18.78	

TEST ENGINEER: BILL WU

EUT	:	Printer	Temperature :	22℃
Model No.	:	SP C342DN	Humidity :	60%RH
Test Mode	:	Standby	Date of Test :	Feb 29, 2016

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Vertical	**30.000**	**40.66**	**18.90**	**0.63**	**--**	**31.64**	**40.00**	**8.36**	QP
	80.440	48.44	9.43	1.09	--	30.44	40.00	9.56	
	122.150	44.94	12.92	1.48	--	31.25	43.50	12.25	
	137.670	47.07	12.54	1.56	--	33.05	43.50	10.45	
	597.450	37.53	18.98	2.31	--	29.80	46.00	16.20	
	747.800	41.65	20.10	3.62	--	36.86	46.00	9.14	
	1672.000	57.02	26.32	4.06	35.46	51.94	74.00	22.06	PK
	2330.000	47.75	28.12	4.75	35.14	45.48	74.00	28.52	
	2834.000	44.15	29.83	5.54	35.19	44.33	74.00	29.67	
	2988.000	45.76	30.47	5.76	35.20	46.79	74.00	27.21	
	4038.000	42.88	32.86	5.95	34.28	47.41	74.00	26.59	
	4990.000	42.97	34.09	6.05	33.91	49.20	74.00	24.80	
	1672.000	42.48	26.32	4.06	35.46	37.40	54.00	16.60	AV
	2330.000	34.21	28.12	4.75	35.14	31.94	54.00	22.06	
	2834.000	30.85	29.83	5.54	35.19	31.03	54.00	22.97	
	2988.000	31.39	30.47	5.76	35.20	32.42	54.00	21.58	
	4038.000	27.30	32.86	5.95	34.28	31.83	54.00	22.17	
	4990.000	28.95	34.09	6.05	33.91	35.18	54.00	18.82	

TEST ENGINEER: BILL WU

EUT	:	Printer	Temperature :	22℃
Model No.	:	SP C342DN	Humidity	:	60%RH
Test Mode	:	NIC2(1000BASE) Print	Date of Test	:	Feb 29, 2016

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	136.700	21.15	12.57	1.56	--	35.28	43.50	8.22	QP
	150.280	20.73	11.46	1.63	--	33.82	43.50	9.68	
	375.000	16.19	16.39	2.69	--	35.27	46.00	10.73	
	664.380	12.29	19.60	3.16	--	35.05	46.00	10.95	
	747.800	14.31	20.10	3.62	--	38.03	46.00	7.97	
	798.240	**14.45**	**20.57**	**3.68**	**--**	**38.70**	**46.00**	**7.30**	
	1280.000	51.88	24.77	3.63	36.00	44.28	74.00	29.72	PK
	1350.000	53.24	25.06	3.69	35.89	46.10	74.00	27.90	
	1826.000	48.96	26.89	4.19	35.28	44.76	74.00	29.24	
	2848.000	51.62	29.90	5.54	35.19	51.87	74.00	22.13	
	2988.000	43.78	30.47	5.76	35.20	44.81	74.00	29.19	
	4990.000	40.75	34.09	6.05	33.91	46.98	74.00	27.02	
	1280.000	37.10	24.77	3.63	36.00	29.50	54.00	24.50	AV
	1350.000	39.85	25.06	3.69	35.89	32.71	54.00	21.29	
	1826.000	34.75	26.89	4.19	35.28	30.55	54.00	23.45	
	2848.000	38.21	29.90	5.54	35.19	38.46	54.00	15.54	
	2988.000	30.82	30.47	5.76	35.20	31.85	54.00	22.15	
	4990.000	26.35	34.09	6.05	33.91	32.58	54.00	21.42	

TEST ENGINEER: BILL WU

EUT	:	Printer	Temperature :	22℃	
Model No.	:	SP C342DN	Humidity	:	60%RH
Test Mode	:	NIC2(1000BASE) Print	Date of Test	:	Feb 29, 2016

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Vertical	30.970	11.58	18.15	0.64	--	30.37	40.00	9.63	QP
	39.700	17.50	12.95	0.73	--	31.18	40.00	8.82	
	105.660	**22.05**	**12.52**	**1.36**	**--**	**35.93**	**43.50**	**7.57**	
	500.450	12.19	17.90	2.94	--	33.03	46.00	12.97	
	749.740	10.56	20.10	3.62	--	34.28	46.00	11.72	
	895.240	10.07	21.30	4.46	--	35.83	46.00	10.17	
	1056.000	54.83	23.78	4.43	36.39	46.65	74.00	27.35	PK
	1196.000	53.35	24.43	3.52	36.14	45.16	74.00	28.84	
	1784.000	49.33	26.74	4.15	35.33	44.89	74.00	29.11	
	2246.000	48.70	27.97	4.69	35.13	46.23	74.00	27.77	
	4024.000	42.10	32.84	5.95	34.29	46.60	74.00	27.40	
	4990.000	44.30	34.09	6.05	33.91	50.53	74.00	23.47	
	1056.000	40.50	23.78	4.43	36.39	32.32	54.00	21.68	AV
	1196.000	40.39	24.43	3.52	36.14	32.20	54.00	21.80	
	1784.000	34.48	26.74	4.15	35.33	30.04	54.00	23.96	
	2246.000	35.00	27.97	4.69	35.13	32.53	54.00	21.47	
	4024.000	28.59	32.84	5.95	34.29	33.09	54.00	20.91	
	4990.000	30.46	34.09	6.05	33.91	36.69	54.00	17.31	

TEST ENGINEER: BILL WU

EUT	:	Printer	Temperature :	22℃
Model No.	:	SP C342DN	Humidity	:	60%RH
Test Mode	:	PictBridge(Rear)	Date of Test	:	Feb 29, 2016

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	90.140	20.59	10.50	1.21	--	32.30	43.50	11.20	QP
	136.700	21.39	12.57	1.56	--	35.52	43.50	7.98	
	152.220	20.79	11.35	1.65	--	33.79	43.50	9.71	
	664.380	13.46	19.60	3.16	--	36.22	46.00	9.78	
	746.830	14.90	20.03	3.62	--	38.55	46.00	7.45	
	896.210	**12.97**	**21.30**	**4.46**	**--**	**38.73**	**46.00**	**7.27**	
	1140.000	51.54	24.17	3.86	36.24	43.33	74.00	30.67	PK
	1336.000	50.01	25.00	3.69	35.92	42.78	74.00	31.22	
	2988.000	47.14	30.47	5.76	35.20	48.17	74.00	25.83	
	3296.000	45.17	31.12	6.03	34.90	47.42	74.00	26.58	
	4038.000	44.07	32.86	5.95	34.28	48.60	74.00	25.40	
	4990.000	41.14	34.09	6.05	33.91	47.37	74.00	26.63	
	1140.000	37.60	24.17	3.86	36.24	29.39	54.00	24.61	AV
	1336.000	36.21	25.00	3.69	35.92	28.98	54.00	25.02	
	2988.000	34.20	30.47	5.76	35.20	35.23	54.00	18.77	
	3296.000	32.84	31.12	6.03	34.90	35.09	54.00	18.91	
	4038.000	30.65	32.86	5.95	34.28	35.18	54.00	18.82	
	4990.000	28.48	34.09	6.05	33.91	34.71	54.00	19.29	

TEST ENGINEER: BILL WU

EUT	:	Printer	Temperature :	22℃	
Model No.	:	SP C342DN	Humidity	:	60%RH
Test Mode	:	PictBridge(Rear)	Date of Test	:	Feb 29, 2016

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Vertical	39.500	15.90	12.97	0.73	--	29.60	40.00	10.40	QP
	105.660	20.57	12.52	1.36	--	34.45	43.50	9.05	
	129.910	**21.23**	**12.80**	**1.52**	**--**	**35.55**	**43.50**	**7.95**	
	231.760	20.30	11.28	2.09	--	33.67	46.00	12.33	
	526.640	12.50	18.22	2.73	--	33.45	46.00	12.55	
	891.360	11.16	21.30	4.46	--	36.92	46.00	9.08	
	1336.000	46.96	25.00	3.69	35.92	39.73	74.00	34.27	PK
	1952.000	51.65	27.33	4.39	35.15	48.22	74.00	25.78	
	2078.000	46.17	27.65	4.53	35.11	43.24	74.00	30.76	
	2988.000	45.17	30.47	5.76	35.20	46.20	74.00	27.80	
	4038.000	42.08	32.86	5.95	34.28	46.61	74.00	27.39	
	4990.000	41.05	34.09	6.05	33.91	47.28	74.00	26.72	
	1336.000	32.47	25.00	3.69	35.92	25.24	54.00	28.76	AV
	1952.000	37.48	27.33	4.39	35.15	34.05	54.00	19.95	
	2078.000	33.76	27.65	4.53	35.11	30.83	54.00	23.17	
	2988.000	33.58	30.47	5.76	35.20	34.61	54.00	19.39	
	4038.000	30.57	32.86	5.95	34.28	35.10	54.00	18.90	
	4990.000	28.48	34.09	6.05	33.91	34.71	54.00	19.29	

TEST ENGINEER: BILL WU

EUT	:	Printer	Temperature :	22℃
Model No.	:	SP C342DN	Humidity	:	60%RH
Test Mode	:	PictBridge(Front)	Date of Test	:	Feb 29, 2016

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	97.900	18.54	12.07	1.30	--	31.91	43.50	11.59	QP
	138.640	20.00	12.53	1.57	--	34.10	43.50	9.40	
	160.950	**22.50**	**11.13**	**1.72**	**--**	**35.35**	**43.50**	**8.15**	
	241.460	23.22	12.00	2.13	--	37.35	46.00	8.65	
	664.380	14.24	19.60	3.16	--	37.00	46.00	9.00	
	747.800	13.86	20.10	3.62	--	37.58	46.00	8.42	
	1140.000	51.33	24.17	3.86	36.24	43.12	74.00	30.88	PK
	1350.000	49.82	25.06	3.69	35.89	42.68	74.00	31.32	
	2288.000	52.49	28.04	4.72	35.13	50.12	74.00	23.88	
	2610.000	51.44	28.90	5.11	35.17	50.28	74.00	23.72	
	2988.000	46.14	30.47	5.76	35.20	47.17	74.00	26.83	
	4976.000	42.75	34.07	6.14	33.91	49.05	74.00	24.95	
	1140.000	38.31	24.17	3.86	36.24	30.10	54.00	23.90	AV
	1350.000	35.49	25.06	3.69	35.89	28.35	54.00	25.65	
	2288.000	39.29	28.04	4.72	35.13	36.92	54.00	17.08	
	2610.000	38.29	28.90	5.11	35.17	37.13	54.00	16.87	
	2988.000	32.39	30.47	5.76	35.20	33.42	54.00	20.58	
	4976.000	29.85	34.07	6.14	33.91	36.15	54.00	17.85	

TEST ENGINEER: BILL WU

EUT	:	Printer	Temperature :	22℃	
Model No.	:	SP C342DN	Humidity	:	60%RH
Test Mode	:	PictBridge(Front)	Date of Test	:	Feb 29, 2016

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Vertical	**39.700**	**47.56**	**12.95**	**0.73**	**--**	**32.83**	**40.00**	**7.17**	QP
	128.940	49.39	12.87	1.52	--	35.68	43.50	7.82	
	145.430	49.37	12.03	1.61	--	34.88	43.50	8.62	
	596.480	39.29	18.98	2.31	--	31.56	46.00	14.44	
	718.700	43.29	19.88	3.57	--	38.02	46.00	7.98	
	747.800	43.17	20.10	3.62	--	38.38	46.00	7.62	
	1140.000	49.96	24.17	3.86	36.24	41.75	74.00	32.25	PK
	1336.000	46.31	25.00	3.69	35.92	39.08	74.00	34.92	
	2022.000	45.09	27.55	4.47	35.10	42.01	74.00	31.99	
	3030.000	54.37	30.58	5.83	35.17	55.61	74.00	18.39	
	3814.000	45.62	32.33	5.94	34.45	49.44	74.00	24.56	
	4990.000	40.59	34.09	6.05	33.91	46.82	74.00	27.18	
	1140.000	35.29	24.17	3.86	36.24	27.08	54.00	26.92	AV
	1336.000	32.12	25.00	3.69	35.92	24.89	54.00	29.11	
	2022.000	33.72	27.55	4.47	35.10	30.64	54.00	23.36	
	3030.000	40.73	30.58	5.83	35.17	41.97	54.00	12.03	
	3814.000	32.83	32.33	5.94	34.45	36.65	54.00	17.35	
	4990.000	26.55	34.09	6.05	33.91	32.78	54.00	21.22	

TEST ENGINEER: BILL WU

EUT	:	Printer	Temperature :	22℃
Model No.	:	SP C342DN	Humidity	:	60%RH
Test Mode	:	Media Print (SD)	Date of Test	:	Feb 29, 2016

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	94.990	47.86	11.70	1.27	--	32.43	43.50	11.07	QP
	147.370	49.38	11.80	1.62	--	34.67	43.50	8.83	
	228.850	47.29	11.12	2.08	--	32.87	46.00	13.13	
	334.580	42.04	14.93	2.64	--	31.92	46.00	14.08	
	665.350	42.87	19.60	3.16	--	36.70	46.00	9.30	
	747.800	**42.83**	**20.10**	**3.62**	**--**	**38.04**	**46.00**	**7.96**	
	1112.000	50.30	24.06	4.09	36.29	42.16	74.00	31.84	PK
	1336.000	49.32	25.00	3.69	35.92	42.09	74.00	31.91	
	2988.000	45.16	30.47	5.76	35.20	46.19	74.00	27.81	
	4038.000	44.00	32.86	5.95	34.28	48.53	74.00	25.47	
	5004.000	45.23	34.10	6.05	33.90	51.48	74.00	22.52	
	6978.000	35.86	37.16	9.52	35.27	47.27	74.00	26.73	
	1112.000	36.37	24.06	4.09	36.29	28.23	54.00	25.77	AV
	1336.000	34.35	25.00	3.69	35.92	27.12	54.00	26.88	
	2988.000	32.48	30.47	5.76	35.20	33.51	54.00	20.49	
	4038.000	30.48	32.86	5.95	34.28	35.01	54.00	18.99	
	5004.000	33.65	34.10	6.05	33.90	39.90	54.00	14.10	
	6978.000	22.36	37.16	9.52	35.27	33.77	54.00	20.23	

TEST ENGINEER: BILL WU

EUT	:	Printer	Temperature :	22℃	
Model No.	:	SP C342DN	Humidity	:	60%RH
Test Mode	:	Media Print (SD)	Date of Test	:	Feb 29, 2016

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Vertical	30.270	12.50	18.71	0.64	--	31.85	40.00	8.15	QP
	41.640	18.96	12.41	0.75	--	32.12	40.00	7.88	
	51.340	24.05	7.27	0.82	--	32.14	40.00	7.86	
	130.880	21.17	12.76	1.53	--	35.46	43.50	8.04	
	148.340	**22.49**	**11.65**	**1.62**	**--**	**35.76**	**43.50**	**7.74**	
	432.550	17.29	16.82	2.79	--	36.90	46.00	9.10	
	1042.000	52.02	23.71	4.55	36.41	43.87	74.00	30.13	PK
	2064.000	48.88	27.63	4.53	35.11	45.93	74.00	28.07	
	2848.000	45.23	29.90	5.54	35.19	45.48	74.00	28.52	
	4038.000	41.12	32.86	5.95	34.28	45.65	74.00	28.35	
	4990.000	40.50	34.09	6.05	33.91	46.73	74.00	27.27	
	7482.000	35.59	37.68	9.53	35.69	47.11	74.00	26.89	
	1042.000	38.52	23.71	4.55	36.41	30.37	54.00	23.63	AV
	2064.000	34.26	27.63	4.53	35.11	31.31	54.00	22.69	
	2848.000	32.64	29.90	5.54	35.19	32.89	54.00	21.11	
	4038.000	27.37	32.86	5.95	34.28	31.90	54.00	22.10	
	4990.000	27.38	34.09	6.05	33.91	33.61	54.00	20.39	
	7482.000	22.38	37.68	9.53	35.69	33.90	54.00	20.10	

TEST ENGINEER: BILL WU

EUT	:	Printer	Temperature :	22℃
Model No.	:	SP C342DN	Humidity	:	60%RH
Test Mode	:	Media Print (USB)	Date of Test	:	Feb 29, 2016

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	88.200	49.53	10.25	1.18	--	32.50	43.50	11.00	QP
	137.670	48.53	12.54	1.56	--	34.51	43.50	8.99	
	157.070	49.69	11.16	1.68	--	34.39	43.50	9.11	
	253.100	46.17	12.62	2.18	--	33.40	46.00	12.60	
	500.450	41.51	17.90	2.94	--	33.78	46.00	12.22	
	663.410	**44.00**	**19.60**	**3.03**	**--**	**37.70**	**46.00**	**8.30**	
	1336.000	51.41	25.00	3.69	35.92	44.18	74.00	29.82	PK
	1952.000	47.43	27.33	4.39	35.15	44.00	74.00	30.00	
	2988.000	45.32	30.47	5.76	35.20	46.35	74.00	27.65	
	4024.000	43.23	32.84	5.95	34.29	47.73	74.00	26.27	
	5004.000	46.08	34.10	6.05	33.90	52.33	74.00	21.67	
	6404.000	34.42	35.96	7.98	34.61	43.75	74.00	30.25	
	1336.000	41.84	25.00	3.69	35.92	34.61	54.00	19.39	AV
	1952.000	33.47	27.33	4.39	35.15	30.04	54.00	23.96	
	2988.000	32.48	30.47	5.76	35.20	33.51	54.00	20.49	
	4024.000	30.49	32.84	5.95	34.29	34.99	54.00	19.01	
	5004.000	32.57	34.10	6.05	33.90	38.82	54.00	15.18	
	6404.000	21.64	35.96	7.98	34.61	30.97	54.00	23.03	

TEST ENGINEER: BILL WU

EUT	:	Printer	Temperature :	22℃	
Model No.	:	SP C342DN	Humidity	:	60%RH
Test Mode	:	Media Print (USB)	Date of Test	:	Feb 29, 2016

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Vertical	**37.760**	**46.31**	**13.35**	**0.71**	**--**	**31.93**	**40.00**	**8.07**	QP
	127.000	48.47	12.97	1.51	--	34.85	43.50	8.65	
	148.340	50.20	11.65	1.62	--	35.34	43.50	8.16	
	435.460	42.44	16.86	2.79	--	33.75	46.00	12.25	
	525.670	41.28	18.22	2.78	--	33.58	46.00	12.42	
	663.410	40.86	19.60	3.03	--	34.56	46.00	11.44	
	1350.000	55.39	25.06	3.69	35.89	48.25	74.00	25.75	PK
	2246.000	43.63	27.97	4.69	35.13	41.16	74.00	32.84	
	2988.000	45.05	30.47	5.76	35.20	46.08	74.00	27.92	
	4024.000	42.99	32.84	5.95	34.29	47.49	74.00	26.51	
	5004.000	39.92	34.10	6.05	33.90	46.17	74.00	27.83	
	7944.000	34.87	38.52	9.69	36.04	47.04	74.00	26.96	
	1350.000	42.49	25.06	3.69	35.89	35.35	54.00	18.65	AV
	2246.000	30.26	27.97	4.69	35.13	27.79	54.00	26.21	
	2988.000	32.73	30.47	5.76	35.20	33.76	54.00	20.24	
	4024.000	28.48	32.84	5.95	34.29	32.98	54.00	21.02	
	5004.000	26.36	34.10	6.05	33.90	32.61	54.00	21.39	
	7944.000	20.63	38.52	9.69	36.04	32.80	54.00	21.20	

TEST ENGINEER: BILL WU

EUT	:	Printer	Temperature :	22℃
Model No.	:	SP C342DN	Humidity :	60%RH
Test Mode	:	IEEE1284 Print + USB 2.0 Print+ NIC(1000BASE) Ping	Date of Test :	Feb 29, 2016

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	90.140	49.71	10.50	1.21	--	32.97	43.50	10.53	QP
	145.430	50.67	12.03	1.61	--	36.18	43.50	7.32	
	274.440	46.02	13.22	2.39	--	34.15	46.00	11.85	
	597.450	**46.52**	**18.98**	**2.31**	**--**	**38.79**	**46.00**	**7.21**	
	746.830	43.13	20.03	3.62	--	38.27	46.00	7.73	
	895.240	36.50	21.30	4.46	--	34.27	46.00	11.73	
	1345.000	64.81	25.05	3.69	35.91	57.64	74.00	16.36	PK
	2092.000	52.36	27.68	4.55	35.11	49.48	74.00	24.52	
	2848.000	52.85	29.90	5.54	35.19	53.10	74.00	20.90	
	3436.000	47.41	31.39	6.14	34.77	50.17	74.00	23.83	
	4990.000	46.38	34.09	6.05	33.91	52.61	74.00	21.39	
	9204.000	34.95	38.54	11.07	35.34	49.22	74.00	24.78	
	1345.000	40.05	25.05	3.69	35.91	32.88	54.00	21.12	AV
	2092.000	39.49	27.68	4.55	35.11	36.61	54.00	17.39	
	2848.000	38.22	29.90	5.54	35.19	38.47	54.00	15.53	
	3436.000	35.28	31.39	6.14	34.77	38.04	54.00	15.96	
	4990.000	32.92	34.09	6.05	33.91	39.15	54.00	14.85	
	9204.000	20.12	38.54	11.07	35.34	34.39	54.00	19.61	

TEST ENGINEER: BILL WU

EUT	:	Printer	Temperature :	22℃	
Model No.	:	SP C342DN	Humidity	:	60%RH
Test Mode	:	IEEE1284 Print + USB 2.0 Print+ NIC(1000BASE) Ping	Date of Test	:	Feb 29, 2016

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Vertical	30.970	12.71	18.15	0.64	--	31.50	40.00	8.50	QP
	37.760	17.08	13.35	0.71	--	31.14	40.00	8.86	
	127.000	20.65	12.97	1.51	--	35.13	43.50	8.37	
	180.350	21.81	10.50	1.85	--	34.16	43.50	9.34	
	597.900	15.50	18.98	2.31	--	36.79	46.00	9.21	
	747.800	**14.88**	**20.10**	**3.62**	**--**	**38.60**	**46.00**	**7.40**	
	1042.000	54.37	23.71	4.55	36.41	46.22	74.00	27.78	PK
	1350.000	54.84	25.06	3.69	35.89	47.70	74.00	26.30	
	2092.000	52.74	27.68	4.55	35.11	49.86	74.00	24.14	
	2988.000	50.43	30.47	5.76	35.20	51.46	74.00	22.54	
	3142.000	48.33	30.80	5.93	35.06	50.00	74.00	24.00	
	4976.000	44.85	34.07	6.14	33.91	51.15	74.00	22.85	
	1042.000	40.74	23.71	4.55	36.41	32.59	54.00	21.41	AV
	1350.000	39.65	25.06	3.69	35.89	32.51	54.00	21.49	
	2092.000	39.23	27.68	4.55	35.11	36.35	54.00	17.65	
	2988.000	35.20	30.47	5.76	35.20	36.23	54.00	17.77	
	3142.000	34.21	30.80	5.93	35.06	35.88	54.00	18.12	
	4976.000	30.81	34.07	6.14	33.91	37.11	54.00	16.89	

TEST ENGINEER: BILL WU

EUT	:	Printer	Temperature :	22℃
Model No.	:	SP C342DN	Humidity	:	60%RH
Test Mode	:	IEEE802.11n Print	Date of Test	:	Apr 02, 2016

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	30.317	18.62	11.38	0.64	--	30.64	40.00	9.36	QP
	95.093	11.75	23.42	1.27	--	36.44	43.50	7.06	
	155.910	**11.19**	**24.32**	**1.68**	**--**	**37.19**	**43.50**	**6.31**	
	432.546	16.82	14.68	2.79	**--**	34.29	46.00	11.71	
	515.437	18.00	12.48	2.84	--	33.32	46.00	12.68	
	972.337	22.40	9.60	4.80	--	36.80	54.00	17.20	
	1047.688	48.57	23.74	4.55	36.41	40.45	74.00	33.55	PK
	1711.770	46.93	26.47	4.09	35.42	42.07	74.00	31.93	
	2493.774	54.58	28.39	4.89	35.15	52.71	74.00	21.29	
	2655.171	48.46	29.10	5.18	35.17	47.57	74.00	26.43	
	4163.019	48.05	33.06	6.19	34.23	53.07	74.00	20.93	
	5778.433	45.99	35.01	8.18	34.06	55.12	74.00	18.88	
	1047.688	33.28	23.74	4.55	36.41	25.16	54.00	28.84	AV
	1711.770	32.11	26.47	4.09	35.42	27.25	54.00	26.75	
	2493.774	40.48	28.39	4.89	35.15	38.61	54.00	15.39	
	2655.171	33.76	29.10	5.18	35.17	32.87	54.00	21.13	
	4163.019	33.33	33.06	6.19	34.23	38.35	54.00	15.65	
	5778.433	31.47	35.01	8.18	34.06	40.60	54.00	13.40	

TEST ENGINEER: BILL WU

EUT	:	Printer	Temperature :	22℃
Model No.	:	SP C342DN	Humidity	:	60%RH
Test Mode	:	IEEE802.11n Print	Date of Test	:	Apr 02, 2016

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Vertical	**31.040**	**18.15**	**17.10**	**0.64**	**--**	**35.89**	**40.00**	**4.11**	QP
	52.025	7.10	26.17	0.83	--	34.10	40.00	5.90	
	96.099	11.84	22.78	1.27	--	35.89	43.50	7.61	
	135.032	12.60	23.86	1.55	--	38.01	43.50	5.49	
	144.842	12.10	24.49	1.61	--	38.20	43.50	5.30	
	164.908	11.30	25.37	1.75	--	38.42	43.50	5.08	
	1038.344	48.40	23.69	4.66	36.43	40.32	74.00	33.68	PK
	1363.390	47.20	25.10	3.72	35.87	40.15	74.00	33.85	
	1648.558	47.61	26.23	4.04	35.49	42.39	74.00	31.61	
	3042.509	48.36	30.59	5.83	35.15	49.63	74.00	24.37	
	4185.457	48.47	33.10	6.19	34.22	53.54	74.00	20.46	
	5819.996	46.76	35.03	8.18	34.06	55.91	74.00	18.09	
	1038.344	33.74	23.69	4.66	36.43	25.66	54.00	28.34	AV
	1363.390	32.10	25.10	3.72	35.87	25.05	54.00	28.95	
	1648.558	34.74	26.23	4.04	35.49	29.52	54.00	24.48	
	3042.509	33.75	30.59	5.83	35.15	35.02	54.00	18.98	
	4185.457	32.39	33.10	6.19	34.22	37.46	54.00	16.54	
	5819.996	31.37	35.03	8.18	34.06	40.52	54.00	13.48	

TEST ENGINEER: BILL WU

EUT	:	Printer	Temperature :	22℃
Model No.	:	SP C340DN	Humidity	:	60%RH
Test Mode	:	IEEE802.11n Print	Date of Test	:	Feb 29, 2016

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	**94.990**	**22.19**	**11.70**	**1.27**	**--**	**35.16**	**43.50**	**8.34**	QP
	121.180	18.97	12.86	1.46	--	33.29	43.50	10.21	
	144.460	20.46	12.15	1.60	--	34.21	43.50	9.29	
	161.920	19.62	11.16	1.72	--	32.50	43.50	11.00	
	282.200	14.41	13.35	2.45	--	30.21	46.00	15.79	
	397.700	14.90	16.57	2.71	--	34.18	46.00	11.82	
	1336.000	47.75	25.00	3.69	35.92	40.52	74.00	33.48	PK
	1560.000	51.15	25.87	3.95	35.60	45.37	74.00	28.63	
	2008.000	45.62	27.51	4.47	35.10	42.50	74.00	31.50	
	2988.000	44.19	30.47	5.76	35.20	45.22	74.00	28.78	
	4920.000	48.16	34.02	6.14	33.93	54.39	74.00	19.61	
	13726.000	32.29	41.15	12.28	34.55	51.17	74.00	22.83	
	1336.000	34.93	25.00	3.69	35.92	27.70	54.00	26.30	AV
	1560.000	38.02	25.87	3.95	35.60	32.24	54.00	21.76	
	2008.000	33.29	27.51	4.47	35.10	30.17	54.00	23.83	
	2988.000	30.82	30.47	5.76	35.20	31.85	54.00	22.15	
	4920.000	34.39	34.02	6.14	33.93	40.62	54.00	13.38	
	13726.000	20.49	41.15	12.28	34.55	39.37	54.00	14.63	

TEST ENGINEER: BILL WU

EUT	:	Printer	Temperature :	22℃	
Model No.	:	SP C340DN	Humidity	:	60%RH
Test Mode	:	IEEE802.11n Print	Date of Test	:	Feb 29, 2016

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Vertical	**30.970**	**13.01**	**18.15**	**0.64**	**--**	**31.80**	**40.00**	**8.20**	QP
	61.040	24.51	6.26	0.88	--	31.65	40.00	8.35	
	94.990	19.65	11.70	1.27	--	32.62	43.50	10.88	
	191.990	19.36	10.23	1.92	--	31.51	43.50	11.99	
	524.000	15.20	18.18	2.78	--	36.16	46.00	9.84	
	898.150	11.99	21.30	4.46	--	37.75	46.00	8.25	
	1350.000	46.43	25.06	3.69	35.89	39.29	74.00	34.71	PK
	2638.000	46.11	29.03	5.18	35.17	45.15	74.00	28.85	
	3758.000	41.05	32.19	5.98	34.49	44.73	74.00	29.27	
	7370.000	43.45	37.58	9.53	35.59	54.97	74.00	19.03	
	9890.000	34.18	38.68	10.09	35.14	47.81	74.00	26.19	
	13894.000	33.29	41.18	12.62	34.58	52.51	74.00	21.49	
	1350.000	32.48	25.06	3.69	35.89	25.34	54.00	28.66	AV
	2638.000	34.21	29.03	5.18	35.17	33.25	54.00	20.75	
	3758.000	29.38	32.19	5.98	34.49	33.06	54.00	20.94	
	7370.000	30.19	37.58	9.53	35.59	41.71	54.00	12.29	
	9890.000	20.40	38.68	10.09	35.14	34.03	54.00	19.97	
	13894.000	20.01	41.18	12.62	34.58	39.23	54.00	14.77	

TEST ENGINEER: BILL WU

5 DEBUG DESCRIPTION

The following components are used during the countermeasure procedures:

Name	Specifications (mm)	Manufacturer	Location
Ferrite core	GRFC-7	Kitagawa	See Appendix Figure 44, 86
Ferrite core	RFC-H13	Kitagawa	See Appendix Figure 45, 87

Note: We had required the applicant and manufacturer that all electrical and mechanical devices employed for spurious radiation suppression, including any modifications made during certification testing, must be incorporated in each unit marked

TEST ENGINEER: 

(BYRON WU)

6 DEVIATION TO TEST SPECIFICATIONS

None.