

EMI TEST REPORT

According to FCC Part 15 Subpart B/Class B

Product : Multi Function Printer

Model No. : SF-555P

FCC ID : A3LSF555P

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All tests necessary to show compliance to the requirements were and these results met the specifications requirement.

Date of test : November 6, 2002 ~ November 7, 2002

Issued Date : November 7, 2002

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The test reported herein have been performed in accordance with its terms of registration.



NVLAP Code: 200447

Table of Contents

1. General Information

- 1.1 Product Description
- 1.2 System Block Diagram of Test Configuration

2. System Test Configuration

- 2.1 Configuration of Radiated and Conducted Interference Measurement
- 2.2 Operation Environment
- 2.3 Justification
- 2.4 EUT Exercise Software
- 2.5 Test Procedure

3. Conducted Emission Test Data

4. Radiated Emission Test Data

5. Level Configuration and Location

6. Test Equipment Used

Distribution

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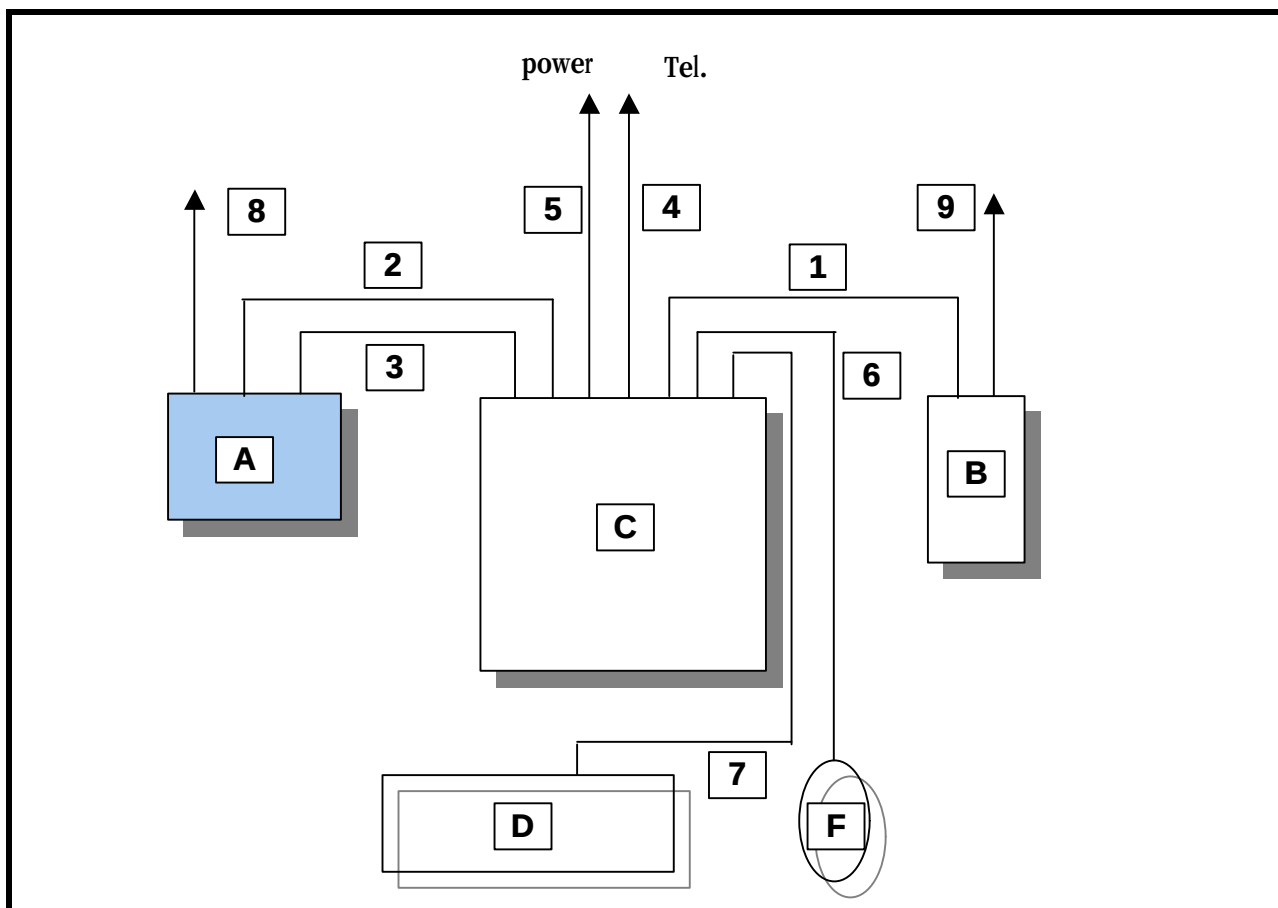
1. General Information

APPLICANT	: Samsung Electronics Co., Ltd. Power Unit Development Section
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REGULATION(S)	: FCC Part 15B Class B
MODEL NUMBER	: SF-555P
SERIAL NUMBER	: -
KIND OF PRODUCT	: Multifunction Printer
TESTED DATE	: November 6, 2002 - November 7, 2002
TEST SITE	: SAMSUNG EMC TEST LAB. FCC Registration Number : 873282 Anechoic Chamber #1

1.1 Product Description

The Samsung MFP, SF-555P is supporting the ADF Copy, Fax Tx, Rx and PC printing, ADF Scan through IEEE1284, USB port. It has Main System clock 10MHz, Video clock 44MHz, USB clock 48MHz and Modem clock 28.224MHz.

1.2 System Block Diagram of Test Configuration



2.5.2 Configuration of EUT and peripherals

Mark	Item	Model No.	Serial No.	Manufacturer	Remark
A	Multifunction Printer	SF-555P	-	Samsung	EUT
B	Monitor	CX-151S-AZ2	N209H4NT726970	Samsung	-
C	PC	NETVISTA	1S831115UKAA6842	IBM	-
D	Key Board	SDL3520	27011381	Samsung	-
E	Mouse	P801	2072747	Samsung	-

2.5.3 Used Cable Description

No.	Item	Length[m]	Shielded(Y/N)	Remark
1	Monitor Cable	1.2	N	
2	Parallel port cable	1	N	
3	USB Cable	1	N	
4	Tel line cable	1.5	N	
5	AC Power Line	1.7	N	
6	Mouse Cable	1.2	Y	
7	Key Board Cable	1.2	Y	
8	AC Power Line	1.7	N	
9	AC Power Line	1.7	N	

2. System Test Configuration

2.1 Configuration of Radiated and Conducted Interference Measurement

* Cabling was taken into consideration and test data was taken under worse case conditions.

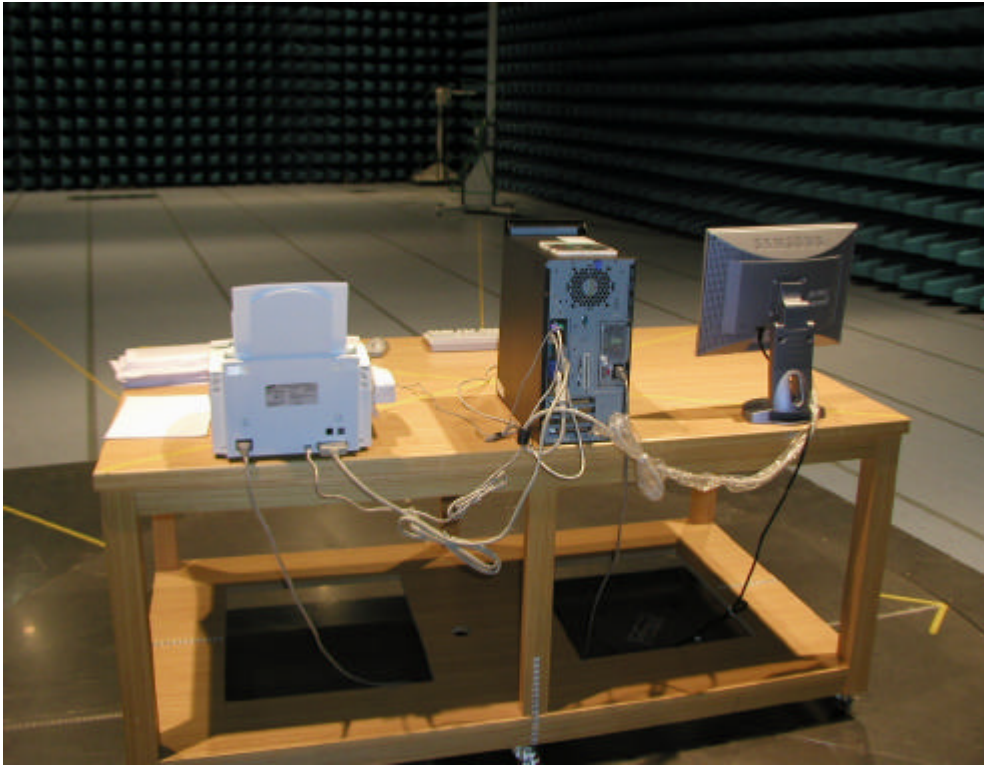
1)Conduction(Front View)



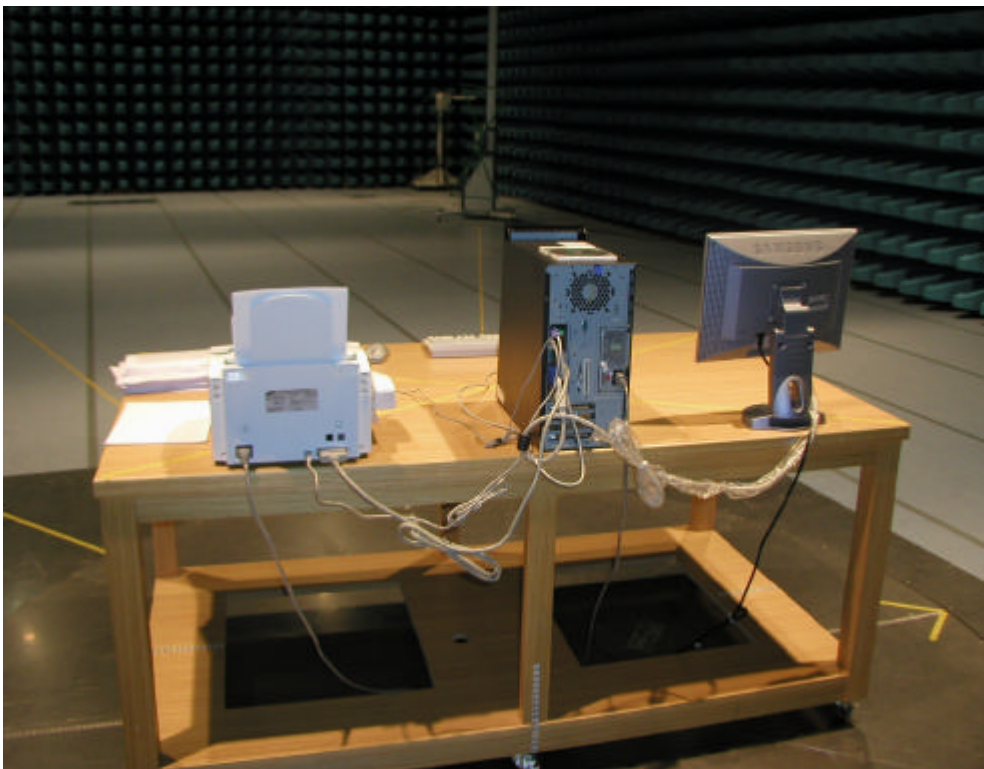
2)Conduction(Rear View)



3) Radiation(Front View)



4) Radiation(Rear View)



2.2 Operation Enviroment

	Conduction	Radiation
Temperature [centigrade] :	26.5	23
Humidity [%] :	22	48
Power supply :	AC110V/60Hz	AC110V/60Hz

2.3 Justification

The system was configured in typical fashion(as a customer would normally use it) for testing.

2.4 EUT Exercise Soft ware

The EUT exercise program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to typical use.

2.5 Test Procedure

2.5.1 Conducted Emissions

Eut was placed on a platform of nominal size, 1m by 1.5m, raised 80cm above the conducting ground plane. The rear of tabletop was located 40cm to the vertical conducting ground plane.

The rear of EUT,including peripherals was aligned and flush with rear of tabletop. All other surfaces of tabletop was at least 80cm from any other grounded conducting surface. I/O cables and AC cables that were connected to the peripherals were bundled in center. They were folded back and forth forming a bundle 30cm to 40cm long and were hanged at a 40cm height to the ground plane.

Each EUT current-carrying power lead,except the ground(safety) lead, were individually connected through a LISN to the input power source.

All unused 50 ohm connectors of the LISN were resistively terminated in 50 ohm when not connected to the measuring equipment.

2.5.2 Radiated Emissions

Eut was placed on a platform of nominal size, 1m by 1.5m, raised 80cm above the conducting ground plane.

The rear of EUT, including peripherals was aligned and flush with rear of tabletop. I/O cables that were connected to the peripherals were bundle in center.

They were folded back and forth forming a bundle 30cm to 40cm long and were hanged 40cm height to the ground plane.

Test was made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna was varied in height above the conducting ground plane to obtain the maximum signal strength.

3. Conducted Emission Test Data

The initial step in collecting conducted data was to perform a quasi-peak scan over the measurement range using a receiver.

The final data represents worst-case emissions.

O Test Mode : USB Print

Frequency [MHz]	Meter reading (a)		Total Loss (b)	Results (a) + (b)		Limits		Margin (Limits-Results)	
	QP	AV		QP	AV	QP	AV	QP	AV
	[dBuV]			[dB]	[dBuV]		[dBuV]		[dB]
0.189	43.3	-	0.6	43.9	-	64.0	54.0	20.1	
0.212	39.5	-	0.6	40.1	-	63.1	53.1	23.0	
0.238	38.0	-	0.6	38.6	-	62.1	52.1	23.5	
0.458	36.0	-	0.5	36.5	-	56.7	46.7	20.2	
1.779	38.0	-	0.7	38.7	-	56.0	46.0	17.4	
2.107	38.6	-	0.5	39.1	-	56.0	46.0	16.9	
2.439	35.7	-	0.5	36.2	-	56.0	46.0	19.8	
2.634	37.9	-	0.6	38.5	-	56.0	46.0	17.5	
9.349	31.9	-	1.1	33.0	-	60.0	50.0	27.0	
20.806	30.8	-	1.8	32.6	-	60.0	50.0	27.4	

* Results = Meter Reading(QP) + Total Loss(LISN Insertion loss + Cable loss)

* Margin = Limits - Result

* QP : Quasi-peak, AV: Average

4. Radiated Emission Test Data

The initial step in collecting radiated data was to perform a quasi-peak scan over the measurement range using a receiver.
All modes of operation were investigated and the worst-case emission are reported.
All other emission are non-significant.
The minimum margin to the limit is as follows :

O Test Mode : USB Print

Frequency Range [MHz]	Tested Frequency [MHz]	ANT Pol.	Meter Reading [A] [dBuV/m]	Total Loss [B] [dB]	Antenna Height [Cm]	Turn table Degree [Deg]	Results [A+B] [dBuV/m]	Limits at 3m [dBuV/m]	Margin (Limit-Result) [dB]
30 - 230	30.000	V	-0.7	18.8	317	180	18.1	30.0	11.9
	42.200	V	5.9	12.4	128	3	18.3	30.0	11.7
	54.070	V	14.5	7.6	254	23	22.1	30.0	7.9
	61.400	V	7.0	6.4	252	180	13.4	30.0	16.6
	153.900	V	2.9	12.0	109	241	14.9	30.0	15.1
	220.000	H	11.2	10.7	301	240	21.9	30.0	8.1
230 - 1000	229.420	V	0.6	11.9	100	88	12.5	37.0	24.5
	744.775	V	-1.1	24.5	400	120	23.4	37.0	13.6
	963.650	H	-0.3	25.6	150	340	25.3	37.0	11.7

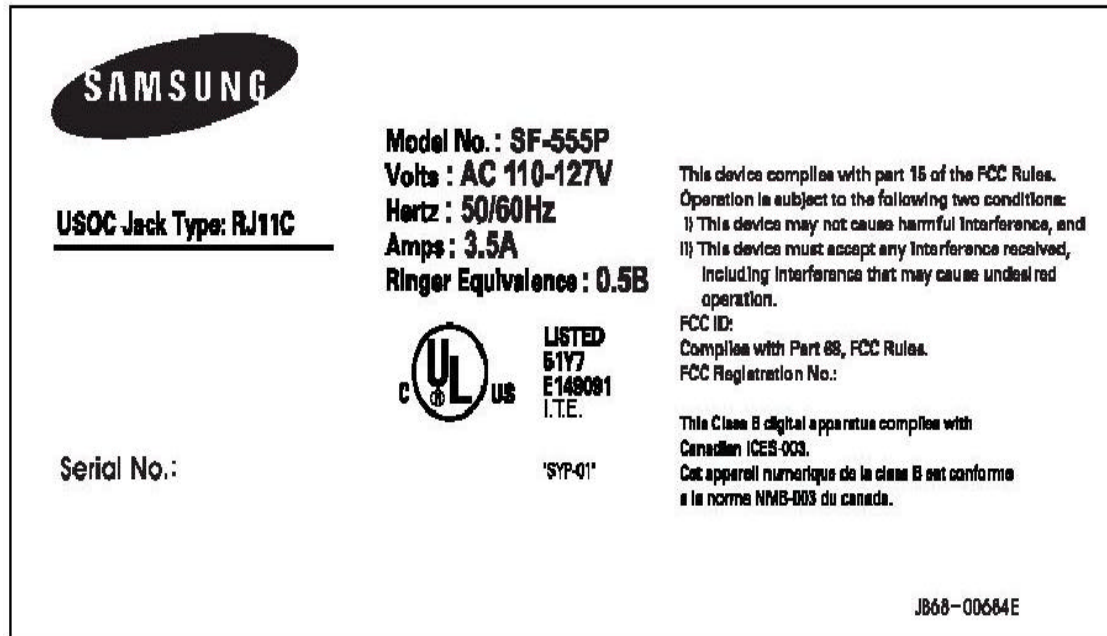
* Receiving Antenna Mode : **Horizontal, Vertical**

* Test distance : 10m

* Results = Meter Reading + Total Loss(Antenna factor + Cable loss)

5. Label Configuration and Location

5.1 Label Configuration



5.2 Location of Label



5. Test Equipment Used

Equipment	Model No.	Serial No.	Makers	Calibration Last calibration and Interval
Field strength meter	ESCS30	830986/004	R & S	03/ 02/15, 12Months
	Firmware versions : Main 2.22, OTP 02.01, GRA 02.36			
Field strength meter	ESI	100010	R & S	03/ 05/04, 12Months
L.I.S.N	ESH2-Z5	831886/006	R & S	02/ 11/20, 12Months
Bi-Log Antenna	CBL6112B	2806	Schaffner	03/04/23, 12Months
Bi-Log Antenna	CBL6112B	2806	Schaffner	03/04/20, 12Months