REPORT OF MEASUREMENT

CERTIFICATION

Product	:	**RF Lighting Devices - Consumer Equipment (Portable Illumination)**
Applicant	:	**Samjung Inverter Co., Ltd.**
Grantee Name	:	**Samjung Inverter Co., Ltd.**
FCC ID.	:	**NUNSS430**
Trade Name	:	**None**
Model No.	:	**SS-430**
Report No.	:	**341-015**
Date	:	**April 13, 1998**

KOREA ACADEMY OF INDUSTRIAL TECHNOLOGY(KAITECH)

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JINJOO LEE, Ph.D
President
Korea Institute of Industrial Technology

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I. GENERAL INFORMATION

1. Applicant's Name and Mailing Address : Samjung Inverter Co., Ltd.
   9-37 Yeockchon-Dong, Eunpyung-Ku, Seoul, Korea 122-070

2. Manufacturer's Name and Mailing Address : Samjung Inverter Co., Ltd.
   9-37 Yeockchon-Dong, Eunpyung-Ku, Seoul, Korea 122-070,

3. Equipment Descriptions

   3.1 Input Voltage : 120V, 60Hz
   3.2 Oscillation Frequency : 47kHz
   3.3 Lamp Wattage : 27W (FPL27W)

4. Rules and Regulations : FCC Part 18

5. Measuring Procedure : FCC/OET MP-5 (1986)

6. Data Also Applies to (*)

   6.1 FCC Identifier : NUNSS430
   6.2 Trade Name : SAMJUNG
   6.3 Model No. : SS-330

   * Note : The device described herein is identical in construction to the device actually measured except for : Lamp Type (FML27W). Refer to photograph.

7. Place of Measurement : Absorber-lined room(3-Meter) of KAITECH

8. Date of Measurement

   8.1 Line Conducted : April 7, 1998
   8.2 Radiated Emission : April 7, 1998

9. Statement of Compliance

We, KAITECH, HEREBY STATE THAT the measurements shown in this report were made in accordance with the procedures indicated and the emission emitted by this equipment was found to be within the limits applicable.

Measured by ;

S. J. Kim

Seok-Jin Kim
Senior Engineer

Reviewed by ;

Chang Ho Ko

Chang-Ho Ko
Team Leader
EMI/EMC Team

II. CONDUCTED EMISSION MEASUREMENT (Section 18.307)

1. Test Procedure

The EUT was installed with fluorescent lamp(FPL 27W) in accordance with the manufacturer's instruction and operated in a manner that is the representative of the typical usage for equipment.

The conducted emission measurement was made in shielded enclosure(5.0m x 3.5m x 2.0m). The EUT was placed on a wooden table 0.8 meters height, 1.0 by 1.5 meters in size and was placed 40 centimeters from a vertical earth grounded conducting surface(wall of shielded enclosure) with keeping at least 80 centimeters from any other earthed conducting surface including the case of LISN.

The LISN (3825/2, EMCO, 50μH, 50Ω) was installed below of the test table. The length of the power lead in excess of the 80 centimeters separating the EUT from the LISN was folded back and forth so as to form a bundle not exceeding 30 to 40 centimeters in length.

The 50ohm output terminal of the LISN was connected to the Spectrum Analyzer (8566B, HP) incorporated with the Quasi-Peak Adapter(85650A, HP) and Transient Limiter (11947A, HP) which was at the outside of the shielded enclosure using the coaxial cable 10 meters length.

The EUT was operated for a sufficient period of time to approximate normal operating conditions. The EUT was configured in manner which tends to maximize its emission characteristics in a typical application such as equipment reoriented or power cables were shifted.

The voltage developed across the 50ohm output terminal in LISN was measured by Spectrum Analyzer in PEAK HOLD MODE and graphed by Plotter(7470A, HP). The 6dB bandwidth of the Spectrum Analyzer and Quasi-Peak Adapter was set at 9kHz.

The frequency range from 450kHz to 30MHz was searched. The frequency and amplitude of the six highest ac powerline conducted emissions relative to the limit were reported. If any peak values were fallen into within 6dB of the limit, they were compared to Quasi-Peak values with Quasi-Peak instrument(ESH3, ROHDE & SCHWARZ).

The maximum emission level from the EUT occurred in such configuration as shown in the following photograph.

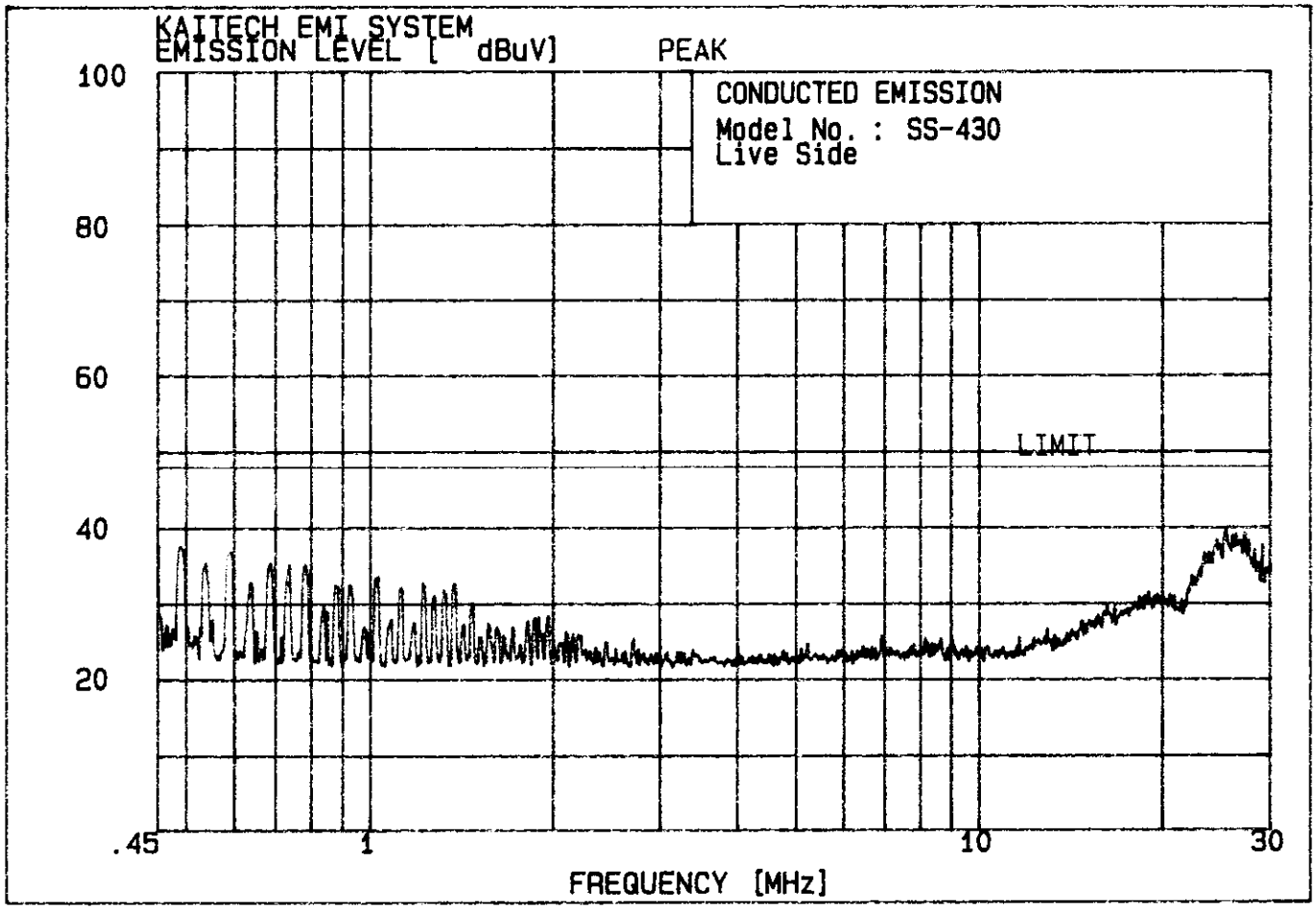
4. Measurement Data

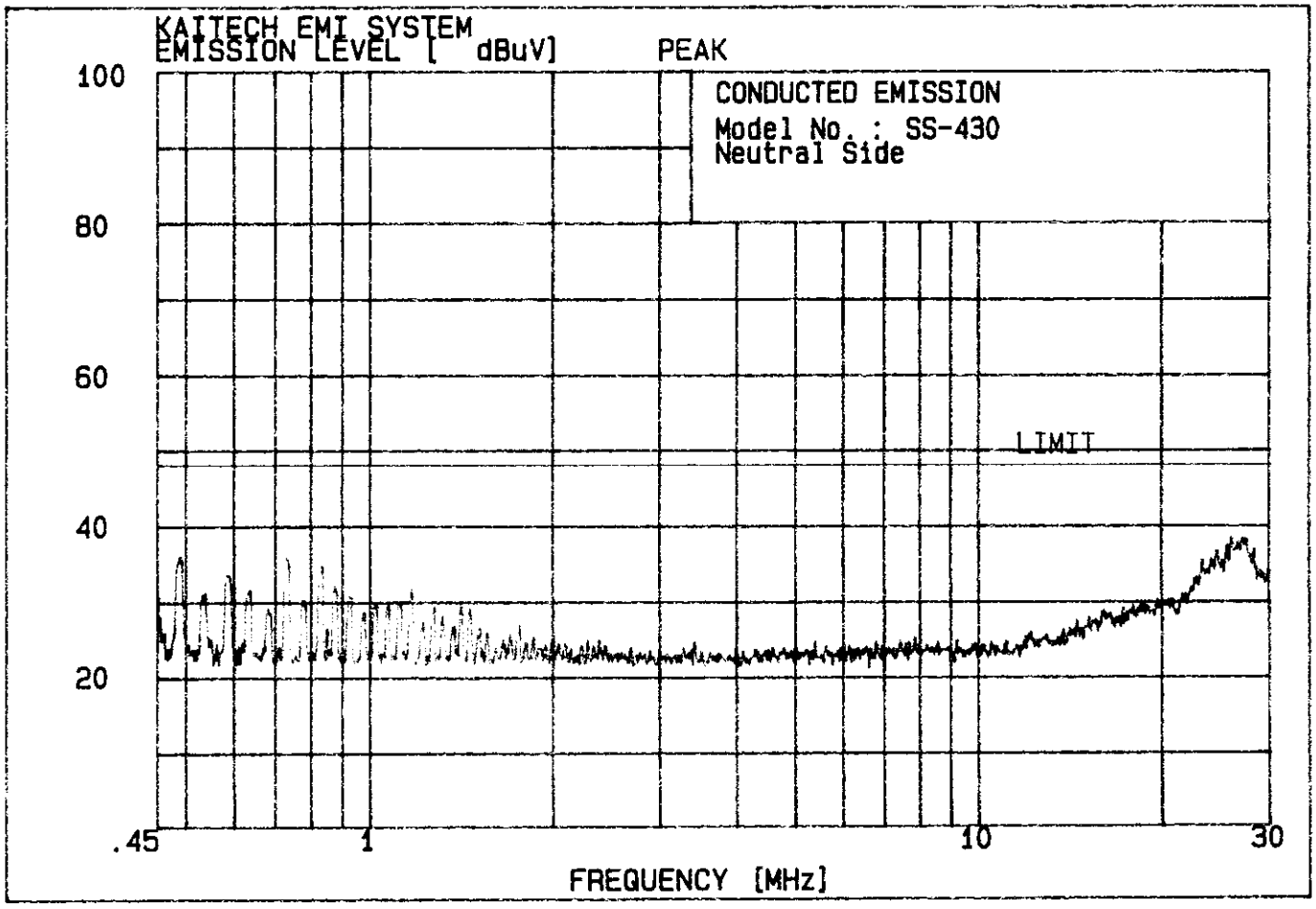
- Resolution Bandwidth : __ x __ Peak (6dB Bandwidth : 9kHz)
  __ x __ CISPR Quasi-Peak (6dB Bandwidth : 9kHz)

Power Lead Tested	Frequency (MHz)	Measured Value		Emission Level		Limit	(*) Margin
		Peak (dBμN)	Q-Peak (dBμN)	(dBμN)	(μN)	(μN)	(dB)
Live to Ground	0.45	37.6	29.0	29.0	28.2	250	-19.0
	0.49	37.7	32.5	32.5	42.2	250	-15.5
	0.60	36.9	32.0	32.0	39.8	250	-16.0
	27.67	39.0	37.0	37.0	70.8	250	-11.0
	-	-	-	-	-	-	-
Neutral to Ground	0.49	36.1	31.5	31.5	37.6	250	-16.5
	0.73	35.9	30.8	30.8	34.7	250	-17.2
	0.83	35.1	30.7	30.7	34.3	250	-17.3
	27.73	38.1	35.1	35.1	56.9	250	-12.9
	-	-	-	-	-	-	-

Note : The noise floor level of the spectrum analyzer was observed in 22dBμN.
The four highest emission level were reported. And refer to measured graphs on next page.

* Margin(dB) : Emission Level (dB) - Limit (dB)


KAITECH EMI SYSTEM
EMISSION LEVEL [dBuV]
PEAK
CONDUCTED EMISSION
Model No. : SS-430
Live Side
LIMIT
100
80
60
40
20
.45
1
10
30
FREQUENCY [MHz]


KAITECH EMI SYSTEM
EMISSION LEVEL [dBuV]
PEAK
CONDUCTED EMISSION
Model No. : SS-430
Neutral Side
LIMIT
100
80
60
40
20
.45
1
10
30
FREQUENCY [MHz]

Ⅲ. RADIATED EMISSION MEASUREMENT (Section 18.305)

1. Test Procedure

1.1 Preliminary Testing for Reference

Preliminary testing was performed in a KAITECH absorber-lined room to determine the emission characteristics of the EUT. The EUT was placed on the wooden table which has dimensions of 0.8 meters in height, 1 meter in length and 1.5 meters in width. The EUT was installed with fluorescent lamp(FPL 27W) in accordance with the manufacturer's instruction and operated in a manner that is the representative of the typical usage for equipment.

Receiving antenna(Biconical antenna : 30~300MHz or Log-periodic antenna : 200~1000MHz was placed at the distance of 1 meter from the EUT.

An attempt was made to maximize the emission level with the various configurations of the EUT. The position of connecting power cable was changed to find the worst case configuration while rotating the table and varying antenna height.

Emissions level from the EUT with various configurations were examined on a Spectrum Analyzer connected with a RF amplifier and graphed by a plotter.

1.2 Final Radiated Emission Test at a Absorber-Lined Room

The final measurement of radiated field strength was carried out in a KAITECH Absorber-Lined Room that was listed up at FCC.

Based on the test results in preliminary test, measurement was made in same test set up and configuration which produced maximum emission level. Receiving antenna was installed at 3-meter distance from the EUT, and was connected to an EMI receiver or spectrum analyzer(for above 1GHz) with a RF amplifier.

Turntable was rotated through 360 degrees and receiving antenna height was varied from 1 to 4 meters above the ground plane to read maximum emission level. The frequency range 30MHz to 1000MHz was searched. The values within 20dB of the limits were measured and recorded for the report unless otherwise stated.

The maximum emission level from the EUT occurred in such configuration as shown in the following photograph.

4. Measurement Data

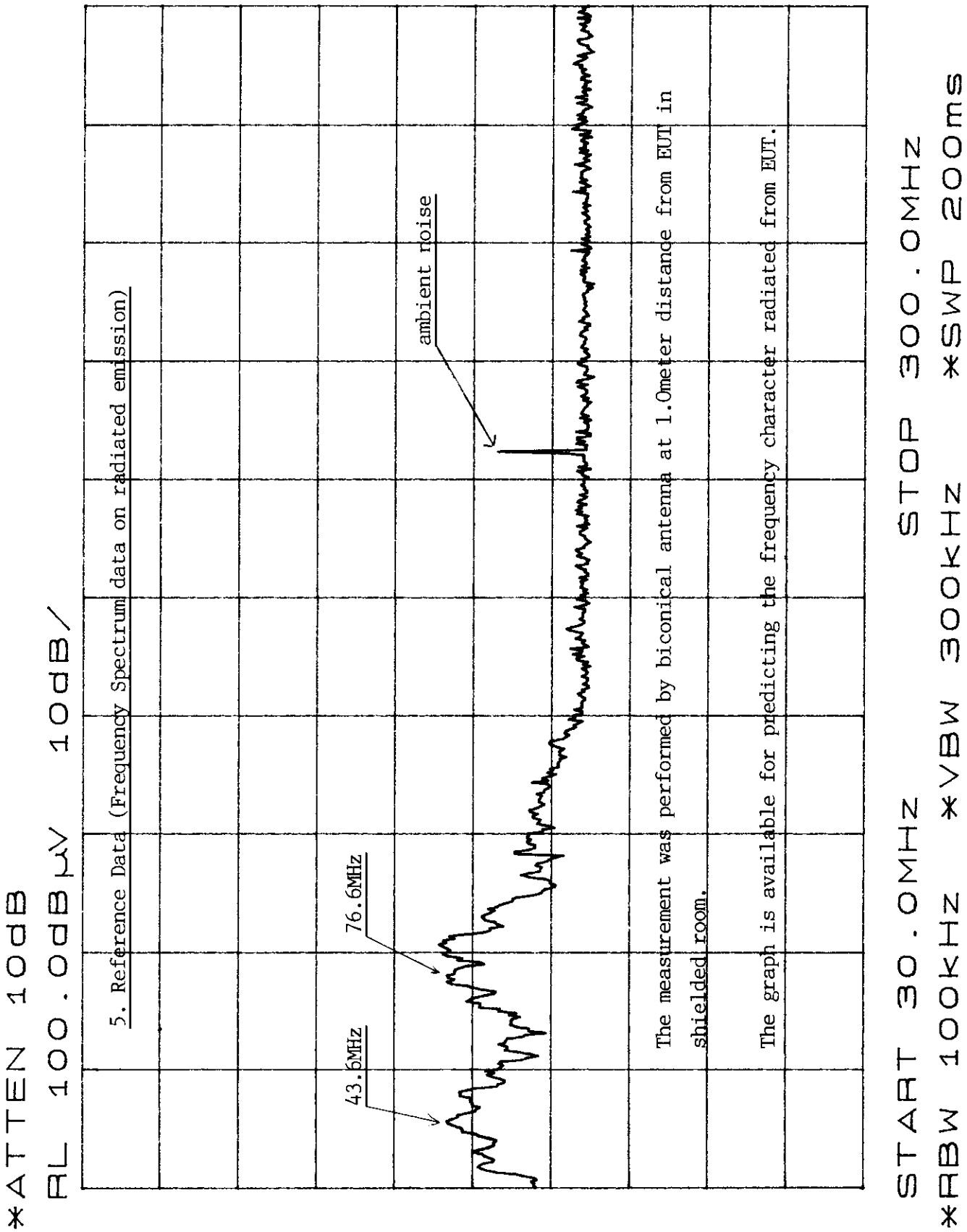
- Resolution Bandwidth : CISPR Quasi-Peak (6dB Bandwidth : 120kHz)
- Measurement Distance : 3 Meter

Frequency (MHz)	* D.M.	* A.P.	Measured Value (dBμV)	* A.F. + C.L (dB)	* A.G. (dB)	* D.C.F. (dB)	Emission Level (dBμV/m)	Emission Level (μV/m)	Limit (μV/m)	** Margin (dB)
43.6	Q	V	13.0	14.1	-	-20.0	7.1	2.3	10.0	-12.9
76.6	Q	V	14.6	7.2	-	-20.0	1.8	1.2	10.0	-18.2
-	-	-	-	-	-	-	-	-	-	-

Note : The noise floor level of the EMI Receiver(ESVS30) was 5.0dBμV. And all other emissions not reported on data were more than 20dB below the permitted level. Refer to graph for radiated emission character from EUT on next page.

* D.M. : Detct Mode (P : Peak, Q : Quasi-Peak, A : Average)
A.P. : Antenna Polarization (H : Horizental, V : Vertical)
A.F. : Antenna Factor
C.L. : Cable Loss
A.G. : Amplifier Gain
D.C.F. : Distance Correction Factor

** Margin (dB) = Emission Level (dB) - Limit (dB)


*ATTEN 10dB
RL 100.0dBμV 10dB/
5. Reference Data (Frequency Spectrum data on radiated emission)
ambient noise
76.6MHz
43.6MHz
The measurement was performed by biconical antenna at 1.0meter distande from EUT in shielded room.
The graph is available for predicting the frequency character radiated from EUT.
START 30.0MHz STOP 300.0MHz
*RBW 100KHz *VBW 300KHz *SWP 200ms

Ⅳ. TEST EQUIPMENT USED FOR MEASUREMENTS

Equipment	Model No.	Manufacturer	Serial No.	Effective Cal. Duration
[x] EMI Receiver (20MHz-1GHz)	ESVS30	R & S	830516/002	07/04/97-07/04/98
[x] Spectrum Analyzer (9kHz-26.5GHz)	8563A	H. P.	3222A02069	01/30/98-01/30/99
[x] Spectrum Analyzer (100Hz-22GHz)	8566B	H. P.	3014A07057	05/29/97-05/29/98
[x] Quasi-Peak Adapter (10kHz-1GHz)	85650A	H. P.	3107A01511	05/29/97-05/29/98
[x] RF-Preselector (20Hz-2GHz)	85685A	H. P.	3010A01181	05/29/97-05/29/98
[x] Test Receiver (9kHz-30MHz)	ESH3	R & S	860905/001	07/04/96-07/04/98
[x] Pre-Amplifier (0.1-3000MHz, 30dB)	8347A	H. P.	2834A00543	05/29/97-05/29/98
[ ] Pre-Amplifier (1-26.5GHz, 35dB)	8449B	H. P.	3008A00302	06/30/97-06/30/98
[x] LISN(50Ω, 50μH) (10kHz-100MHz)	3825/2	EMCO	9010-1710	-
[ ] LISN(50Ω, 50μH) (10kHz-100MHz)	3825/2	EMCO	9011-1720	-
[x] Plotter	7470A	H. P.	3104A21292	-
[ ] Tuned Dipole Ant. (30MHz-300MHz)	VHA 9103	Schwarzbeck	-	*
[ ] Tuned Dipole Ant. (300MHz-1GHz)	UHA 9105	Schwarzbeck	-	*
[x] Biconical Ant. (30MHz-300MHz)	BBA9106	Schwarzbeck	-	*
[x] Log Periodic Ant. (200MHz-1GHz)	3146	EMCO	-	*
[ ] Horn Ant. (1GHz-18GHz)	3115	EMCO	-	*
[ ] DC Power Supply	6260B	H.P.	1145A04822	-
[x] Shielded Room	(5.0m x 4.5m)	SIN-MYUNG	-	-

* Each set of antennas has been calibrated to ensure correlation with ANSI C63.5 standard. The calibration of antennas is traceable to Korea Standard Research Institute(KSRI).