

RF TEST REPORT

Test item : Cellular/PCS GSM/GPRS & Cellular WCDMA/HSDPA/HSUPA
Phone with Bluetooth, WLAN and NFC

Model No. : L-01E

Order No. : DEMC1207-01233

Date of receipt : 2012-07-20

Test duration : 2012-08-13 ~ 2012-08-16

Date of issue : 2012-08-17

Use of report : FCC Original Grant

Applicant : LG Electronics MobileComm U.S.A., Inc.
1000 Sylvan Avenue, Englewood Cliffs NJ 07632

Test laboratory : Digital EMC Co., Ltd.
683-3, Yubang-Dong, Cheoin-Gu, Yongin-Si, Kyunggi-Do, 449-080, Korea

Test specification : FCC Part 15.225 Subpart C

Test environment : See appended test report

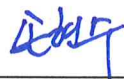
Test result : ☒ Pass ☐ Fail

The test results presented in this test report are limited only to the sample supplied by applicant and the use of this test report is inhibited other than its purpose. This test report shall not be reproduced except in full, without the written approval of DIGITAL EMC CO., LTD.

Tested by:

Witnessed by:

Reviewed by:



Engineer
H.S.SON

N/A



Technical Director
Harvey Sung

CONTENTS

1. Equipment information	3
1.1 Equipment description	3
1.2 Ancillary equipment	3
2. Information about test items	4
2.1 Test mode	4
2.2 Auxiliary equipment	4
2.3 Tested frequency	4
2.4 Tested environment	4
2.5 EMI Suppression Device(s)/Modifications	4
3. Test Report.....	5
3.1 Summary of tests	5
3.2 Transmitter requirements.....	6
3.2.1 20dB Bandwidth Measurement.....	6
3.2.2 In-Band Radiated Spurious Emission	7
3.2.3 Radiated Spurious Emission Measurements, Out-of-Band	8
3.2.4 Frequency Stability	10
3.2.5 AC Line Conducted Emissions.....	11
APPENDIX	14

1. Equipment information

1.1 Equipment description

FCC Equipment Class	Low Power Communications Device Transmitter(DXX)
Equipment type	Cellular/PCS GSM/GPRS & Cellular WCDMA/HSDPA/HSUPA Phone with Bluetooth, WLAN and NFC
Equipment model name	L-01E
Equipment add model name	N/A
Equipment serial no.	Identical prototype
Frequency band	13.56MHz
Modulation type	ASK
Channel	1
Power	Li-ion polymer Battery: DC 3.8V AC-DC Adaptor: AC 120V 60Hz
Antenna type	Loop Antenna

1.2 Ancillary equipment

Equipment	Model No.	Serial No.	Manufacturer	Note
-	-	-	-	-
-	-	-	-	-

2. Information about test items

2.1 Test mode

Test mode	Continuous transmitting mode
-----------	------------------------------

Note: For this test mode, a test program was supported by manufacturer.

2.2 Auxiliary equipment

Equipment	Model No.	Serial No.	Manufacturer	Note
-	-	-	-	-
-	-	-	-	-

2.3 Tested frequency

	TX Frequency (MHz)	RX Frequency (MHz)
Lowest Channel	13.56	13.56
Middle Channel	-	-
Highest Channel	-	-

2.4 Tested environment

Temperature	: 23 ~ 24 °C
Relative humidity content	: 50 ~ 60 % R.H.
Details of power supply	: Battery: DC 3.8 V AC 120V 60Hz

2.5 EMI Suppression Device(s)/Modifications

EMI suppression device(s) added and/or modifications made during testing
→ None

3. Test Report

3.1 Summary of tests

FCC Part Section(s)	Parameter	Limit	Test Condition	Status Note 1
I. Test Items				
2.1049	20 dB Bandwidth	N/A	Radiated	C
15.225 (a)	In-Band Emissions	15,848 $\mu V/m$ @ 30m 15.553 – 13.567 MHz		C
15.225 (b)	In-Band Emissions	334 $\mu V/m$ @ 30m 13.410 – 13.553 MHz 13.567 – 13.710 MHz		C
15.225 (c)	In-Band Emissions	106 $\mu V/m$ @ 30m 13.110 – 13.410 MHz 13.710 – 14.010 MHz		C
15.225 (d) 15.205 15.209	Out-of Band Emissions	Emissions outside of the specified band (13.110-14.010 MHz) must meet the radiated limits detailed in 15.209		C
15.225 (e)	Frequency Stability Tolerance	$\pm 0.01\%$ of operating frequency	Conducted	C
15.207	AC Conducted Emissions	EN 55022	AC Line Conducted	C
15.203	Antenna requirements	FCC Part 15.203	-	C
Note 1: C =Comply NC =Not Comply NT =Not Tested NA =Not Applicable				

The sample was tested according to the following specification:
ANSI C-63.4-2003

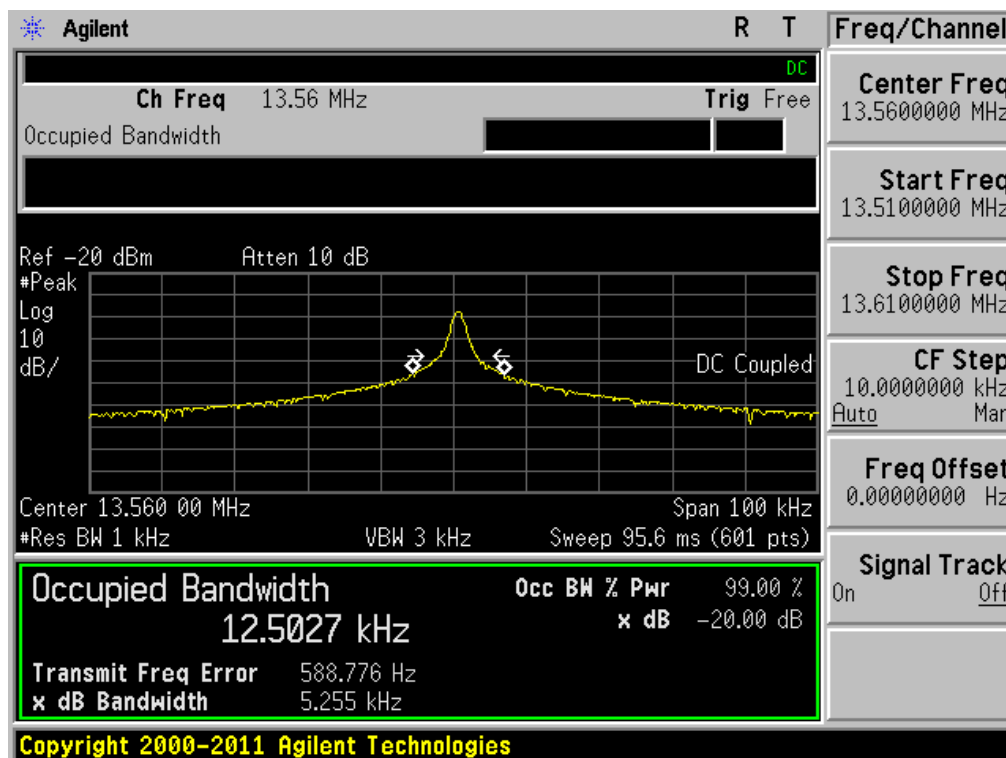
3.2 Transmitter requirements

3.2.1 20dB Bandwidth Measurement

- Procedure:

The 20dB Bandwidth is measured with a spectrum analyzer connected via a receive antenna placed near the EUT while the EUT is operating in transmission mode.

- Measurement Data: Comply



- Minimum Standard: Part 2.1049

None

3.2.2 In-Band Radiated Spurious Emission

- Procedure:

The EUT was placed on a 0.8m high wooden table inside a 10m semi anechoic chamber. An antenna was placed at 3 m distance from the EUT. Measurements were performed with the EUT oriented in 3 orthogonal axis and rotated 360 degrees to determine worst-case orientation for maximum emissions. A loop antenna was used for this test item. And this test item was performed for both vertical and horizontal polarization.

- Measurement Data: **Comply**

Test Frequency Band [MHz]	Freq. [MHz]	EUT Posi.	Reading Level [dBuV]	T.F	Field Strength @3m [dBuV/m]	Field Strength @30m [dBuV/m]	Limit [dBuV/m]	Margin [dB]
13.110 ~ 13.410	13.349	Z	37.30	-13.90	23.40	-16.60	40.51	57.11
13.410 ~ 13.553	13.553	Z	57.70	-14.00	43.70	3.70	50.47	46.77
13.553 ~ 13.567	13.560	Z	63.70	-14.00	49.70	9.70	84.00	74.30
13.567 ~ 13.710	13.567	Z	59.90	-14.00	45.90	5.90	50.47	44.57
13.710 ~ 14.010	13.770	Z	38.00	-14.00	24.00	-16.00	40.51	56.51

Note 1. This test item was performed using a loop antenna.

Note 2. This test item was performed at 3m and the data were extrapolated to the specified measurement distance of 30m using the square of an inverse linear distance extrapolation factor (40 dB/decade) as specified in §15.31(f)2.

▪ Extrapolation Factor = $20 \log_{10}(30/3)^2 = 40\text{dB}$

Note 3. All data were recorded using a spectrum analyzer employing a peak detector.

If PK results were meet Quasi-peak limit, Quasi-peak measurements were omitted.

Note 4. Sample Calculation.

Margin = Limit – Field Strength @ 30m / Field Strength @ 30m = Field Strength @ 3m – 40

Field Strength @ 3m = Reading + T.F / T.F = AF + CL – AG

Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain

- Minimum Standard: Part 15.225(a), (b), (c)

Frequency Band [MHz]	Limit	
	[uV/m]	[dBuV/m]
13.553-13.567	15,848	84.00
13.410-13.553 13.567-13.710	334	50.47
13.110-13.410 13.710-14.010	106	40.51

3.2.3 Radiated Spurious Emission Measurements, Out-of-Band**- Procedure:**

The EUT was tested from 9kHz up to the 1GHz excluding the band 13.110-14.010MHz. All measurements were recorded with spectrum analyzer employing a peak detector for emissions below 30MHz. Above 30MHz a Quasi-peak detector was used. All out-of-band emissions must not exceed the limits §15.209. A loop antenna was used for searching for emissions below 30MHz.

- Measurement Data: Comply (refer to the next page)**- Minimum Standard: Part 15. 205, 209, 225(d)****• FCC Part 15.205 (a):** Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	MHz	GHz	GHz
0.009 ~ 0.110	8.41425 ~ 8.41475	108 ~ 121.94	1300 ~ 1427	3.6 ~ 4.4	14.47 ~ 14.5
0.495 ~ 0.505	12.29 ~ 12.293	123 ~ 138	1435 ~ 1626.5	4.5 ~ 5.15	15.35 ~ 16.2
2.1735 ~ 2.1905	12.51975 ~ 12.52025	149.9 ~ 150.05	1645.5 ~ 1646.5	5.35 ~ 5.46	17.7 ~ 21.4
4.125 ~ 4.128	12.57675 ~ 12.57725	156.52475 ~ 156.52525	1660 ~ 1710	7.25 ~ 7.75	22.01 ~ 23.12
4.17725 ~ 4.17775	13.36 ~ 13.41	156.7 ~ 156.9	1718.8 ~ 1722.2	8.025 ~ 8.5	23.6 ~ 24.0
4.20725 ~ 4.20775	16.42 ~ 16.423	162.0125 ~ 167.17	2200 ~ 2300	9.0 ~ 9.2	31.2 ~ 31.8
6.215 ~ 6.218	16.69475 ~ 16.69525	167.72 ~ 173.2	2310 ~ 2390	9.3 ~ 9.5	36.43 ~ 36.5
6.26775 ~ 6.26825	16.80425 ~ 16.80475	240 ~ 285	2483.5 ~ 2500	10.6 ~ 12.7	Above 38.6
6.31175 ~ 6.31225	25.5 ~ 25.67	322 ~ 335.4	2655 ~ 2900	13.25 ~ 13.4	
8.291 ~ 8.294	37.5 ~ 38.25	399.90 ~ 410	3260 ~ 3267		
8.362 ~ 8.366	73 ~ 74.6	608 ~ 614	3332 ~ 3339		
8.37625 ~ 8.38675	74.8 ~ 75.2	960 ~ 1240	3345.8 ~ 3358		

• FCC Part 15.205(b):

The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in §15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in §15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in §15.35 apply to these measurements.

• FCC Part 15.209(a):

Frequency [MHz]	Field Strength [uV/m]	Measurement Distance [Meters]
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30	30	30
30 ~ 88	100 **	3
88 ~ 216	150 **	3
216 ~ 960	200 **	3
Above 960	200	3

** Except as provided in 15.209(g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88MHz, 174-216MHz or 470-806MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g. 15.231 and 15.241.

• FCC Part 15.209(b):

In the emission table above, the tighter limit applies at the band edges.

- Measurement Data:

Tested Frequency : 13.56MHz
 Measurement Distance : 3 Meters

Frequency [MHz]	EUT Posi.	ANT Pol	Reading [dBuV]	T.F [dB/m]	Distance factor	Field Strength [dBuV/m]	Limit [dBuV/m]	Margin [dB]
27.144	Y	H	34.90	-15.30	40	-20.40	29.54	49.94
53.530	Z	V	43.70	-13.90	N/A	29.80	40.00	10.20
399.038	Z	V	30.40	-5.40	N/A	25.00	46.00	21.00

Note 1. All measurements were recorded using a spectrum analyzer employing a peak detector for below 30MHz and a Quasi-peak detector for above 30MHz.

Note 2. Both Vertical and Horizontal polarities of the receiver antenna were evaluated with the worst case emissions being reported.

Note 3. The worst-case emissions are reported.

Note 4. No other spurious and harmonic emissions were reported greater than listed emissions above table.

Note 5. Sample calculation

Margin = Limit – Field Strength

Field Strength = Reading + T.F – Distance factor

T.F = AF + CL – AG

Distance factor = $20\log(\text{Measurement distance} / \text{The measured distance})^2$

Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain

3.2.4 Frequency Stability

- Procedure:

Part 15.225 requires that devices operating in the 13.553 – 13.567 MHz shall maintain the carrier frequency within 0.01% of the operating frequency over the temperature variation of -20 degrees to + 50 degrees C at normal supply voltage.

- Measurement Data: Comply

Operating Frequency : 13,560,554 Hz

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100%	3.800	+23(ref)	13,560,554	0	0.000000
100%		-20	13,560,697	143	0.001055
100%		-10	13,560,613	59	0.000435
100%		0	13,560,592	38	0.000280
100%		+10	13,560,576	22	0.000162
100%		+20	13,560,544	-10	-0.000074
100%		+30	13,560,549	-5	-0.000037
100%		+40	13,560,523	-31	-0.000229
100%		+50	13,560,485	-69	-0.000509
85%	3.230	+25	13,560,563	9	0.000066
115%	4.370	+25	13,560,520	-34	-0.000251
BATT.ENDPOINT	3.200	+25	13,560,469	-85	-0.000627

- Minimum Standard: Part 15. 225(e)

The frequency tolerance of the carrier signal shall be maintained within $\pm 0.01\%$ of the operating frequency.

3.2.5 AC Line Conducted Emissions

- Procedure:

The conducted emissions are measured in the shielded room with a spectrum analyzer in peak hold. While the measurement, EUT had its hopping function disabled at the middle channels in line with Section 15.21(m). Emissions closest to the limit are measured in the quasi-peak and average detector mode with the tuned receiver using a bandwidth of 9 kHz. The emissions are maximized further by cable manipulation and Exerciser operation. The highest emissions relative to the limit are listed.

- Measurement Data: **Comply** (refer to the next page)

- Minimum Standard: FCC Part 15.207(a)

Frequency Range (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15 ~ 0.5	66 to 56 *	56 to 46 *
0.5 ~ 5	56	46
5 ~ 30	60	50

* Decreases with the logarithm of the frequency

- Measurement Data:



Results of Conducted Emission

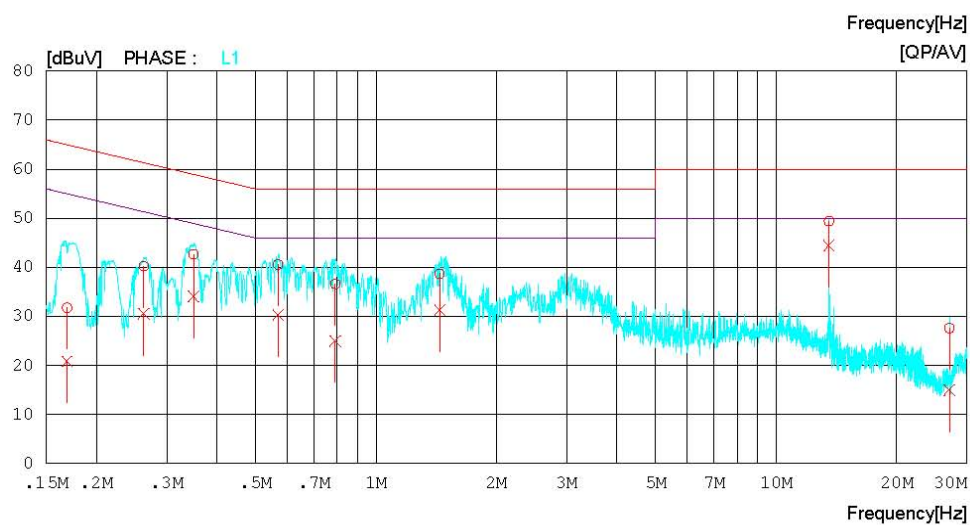
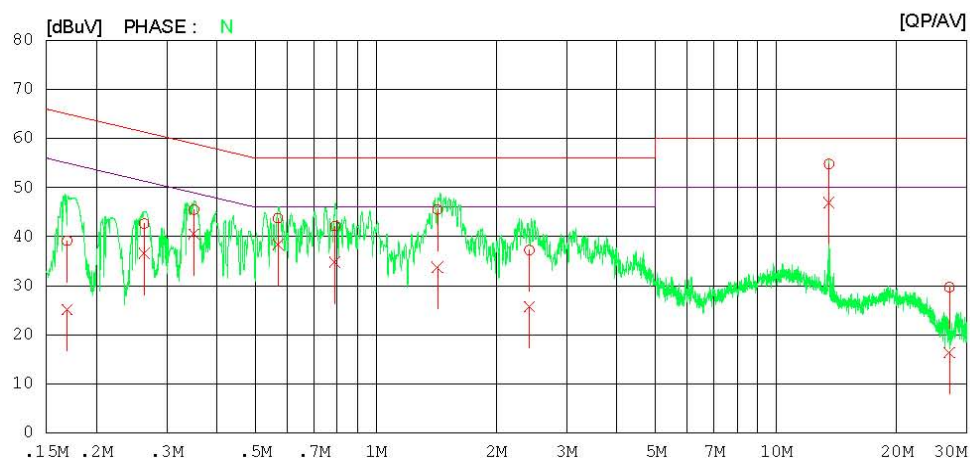
Digital EMC
Date : 2012-08-15

Model No. : L-01E
Type :
Serial No. : Identical prototype
Test Condition : NFC

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi. : 24 °C 55 % R.H.
Operator : H.S.SON

Memo :

LIMIT : CISPR22_B QP
CISPR22_B AV



Results of Conducted Emission

Digital EMC
Date : 2012-08-15

Model No. : L-01E
Type :
Serial No. : Identical prototype
Test Condition : NFC

Reference No. :
Power Supply : 120 V 60 Hz
Temp/Humi. : 24 'C 55 % R.H.
Operator : H.S.SON

Memo :

LIMIT : CISPR22_B QP
CISPR22_B AV

NO	FREQ [MHz]	READING		C.FACTOR [dB]	RESULT		LIMIT		MARGIN		PHASE
		QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	
1	0.16905	38.9	24.9	0.2	39.1	25.1	65.0	55.0	25.9	29.9	N
2	0.26350	42.4	36.4	0.2	42.6	36.6	61.3	51.3	18.7	14.7	N
3	0.35114	45.2	40.2	0.3	45.5	40.5	58.9	48.9	13.4	8.4	N
4	0.56930	43.5	38.2	0.2	43.7	38.4	56.0	46.0	12.3	7.6	N
5	0.79050	41.9	34.6	0.2	42.1	34.8	56.0	46.0	13.9	11.2	N
6	1.42500	45.2	33.4	0.3	45.5	33.7	56.0	46.0	10.5	12.3	N
7	2.41800	37.0	25.4	0.3	37.3	25.7	56.0	46.0	18.7	20.3	N
8	13.56000	53.9	46.0	0.9	54.8	46.9	60.0	50.0	5.2	3.1	N
9	27.12150	28.4	15.1	1.3	29.7	16.4	60.0	50.0	30.3	33.6	N
10	0.16910	31.6	20.7	0.2	31.8	20.9	65.0	55.0	33.2	34.1	L1
11	0.26298	40.0	30.3	0.2	40.2	30.5	61.3	51.3	21.1	20.8	L1
12	0.35024	42.4	33.8	0.3	42.7	34.1	59.0	49.0	16.3	14.9	L1
13	0.56941	40.4	30.2	0.2	40.6	30.4	56.0	46.0	15.4	15.6	L1
14	0.79156	36.4	24.8	0.2	36.6	25.0	56.0	46.0	19.4	21.0	L1
15	1.44350	38.4	31.0	0.3	38.7	31.3	56.0	46.0	17.3	14.7	L1
16	13.56100	48.5	43.5	0.9	49.4	44.4	60.0	50.0	10.6	5.6	L1
17	27.12100	26.3	13.7	1.3	27.6	15.0	60.0	50.0	32.4	35.0	L1

APPENDIX

TEST EQUIPMENT FOR TESTS

To facilitate inclusion on each page of the test equipment used for related tests, each item of test equipment.

	Type	Manufacturer	Model	Cal.Date (yy/mm/dd)	Next.Cal.Date (yy/mm/dd)	S/N
☒	Spectrum Analyzer	Agilent	E4440A	11/09/30	12/09/30	MY45304199
☐	Spectrum Analyzer	Rohde Schwarz	FSQ26	12/01/09	13/01/09	200445
☐	Spectrum analyzer	Agilent	E4404B	12/03/05	13/03/05	US41061134
☐	Spectrum Analyzer(RE)	H.P	8563E	11/10/04	12/10/04	3551A04634
☐	MXA Signal Analyzer	Agilent Technologies, Inc	N9020A	12/01/09	13/01/09	MY49100833
☐	Spectrum Analyzer	Agilent	E4440A	11/10/11	12/10/11	US45303022
☐	Spectrum Analyzer	Agilent	E4440A	11/08/31	12/08/31	US45303051
☐	Power Meter	H.P	EPM-442A	12/07/01	13/07/01	GB37170413
☐	Power Sensor	H.P	8481A	12/07/01	13/07/01	3318A96332
☐	Virtual Power Meter(S/W)	Rohde Schwarz	R&S Power Viewer Plus	-	-	V 4.1.0
☐	Power Divider	Agilent	11636B	11/09/30	12/09/30	56471
☐	4-Way Power Divider	ET Industries	D-0526-4	11/12/01	12/12/01	210195001
☐	Power Splitter	Anritsu	K241B	11/09/30	12/09/30	020611
☐	Power Splitter	Anritsu	K241B	12/07/01	13/07/01	017060
☐	Power Splitters & Dividers	Aeroflex/Weinschel	1594	12/02/07	13/02/07	1177
☐	Frequency Counter	H.P	5342A	12/07/01	13/07/01	2119A04450
☒	TEMP & HUMIDITY Chamber	JISCO	KR-100/J-RHC2	11/09/30	12/09/30	30604493/021031
☐	TEMP & HUMIDITY Chamber	SJ SCIENCE	TEMI850-10	12/03/06	13/03/06	S7400LE267 1226
☒	Digital Multimeter	H.P	34401A	12/03/05	13/03/05	3146A13475, US36122178
☐	Multifunction Synthesizer	HP	8904A	11/10/06	12/10/06	3633A08404
☐	Signal Generator	Rohde Schwarz	SMR20	12/03/05	13/03/05	101251
☐	Signal Generator	H.P	ESG-3000A	12/07/01	13/07/01	US37230529
☒	Vector Signal Generator	Rohde Schwarz	SMJ100A	12/01/09	13/01/09	100148
☐	Vector Signal Generator	Rohde Schwarz	SMBV100A	12/01/09	13/01/09	255571
☐	Audio Analyzer	H.P	8903B	12/07/02	13/07/02	3011A09448
☐	Modulation Analyzer	H.P	8901B	12/07/01	13/07/01	3028A03029
☐	8960 Series 10 Wireless Comms. Test Set	Agilent	E5515C	12/03/05	13/03/05	GB43461134
☐	Universal Radio communication Tester	Rohde Schwarz	CMU200	12/03/06	13/03/06	106760
☐	Bluetooth Tester	TESCOM	TC-3000B	12/07/01	13/07/01	3000B640046
☐	Thermo hygrometer	BODYCOM	BJ5478	12/01/13	13/01/13	090205-3
☒	Thermo hygrometer	BODYCOM	BJ5478	12/01/13	13/01/13	090205-2
☐	Thermo hygrometer	BODYCOM	BJ5478	12/01/13	13/01/13	090205-4
☐	Thermo hygrometer	BODYCOM	BJ5478	12/06/20	13/06/20	120612-1
☐	Thermo hygrometer	BODYCOM	BJ5478	12/06/20	13/06/20	120612-2
☐	AC Power supply	DAEKWANG	5KVA	12/03/05	13/03/05	20060321-1
☒	DC Power Supply	HP	6622A	12/03/05	13/03/05	3448A03760
☐	DC Power Supply	HP	6633A	12/03/05	13/03/05	3524A06634

	Type	Manufacturer	Model	Cal.Date (yy/mm/dd)	Next.Cal.Date (yy/mm/dd)	S/N
☐	DC Power Supply	Protek	PWS-3010D	11/09/30	12/09/30	4072702
☐	DC Power Supply	SM techno	SDP30-5D	12/06/08	13/06/08	305DKA013
☐	BAND Reject Filter	Microwave Circuits	N0308372	11/09/30	12/09/30	3125-01DC0352
☐	BAND Reject Filter	Wainwright	WRCG1750	11/09/30	12/09/30	2
☐	High-Pass Filter	ANRITSU	MP526D	11/09/30	12/09/30	M27756
☐	High-pass filter	Wainwright	WHNX2.1	11/09/30	12/09/30	1
☐	High-pass filter	Wainwright	WHNX3.0	11/09/30	12/09/30	9
☐	High-pass filter	Wainwright	WHNX5.0	11/09/19	12/09/19	8
☐	High-Pass Filter	Wainwright	WHKX8.5	11/09/19	12/09/19	1
☐	High-Pass Filter	Wainwright	WHKX1.0	11/09/30	12/09/30	9
☐	Tunable Notch Filter	Wainwright	WRCT800.0 /960.0-0.2/40-8SSK	N/A	N/A	32
☐	Tunable Notch Filter	Wainwright	WRCD1700.0 /2000.0-0.2/40-10SSK	N/A	N/A	53
☐	Tunable Notch Filter	Wainwright	WRCT1900.0/ 2200.0-5/40-10SSK	N/A	N/A	30
☐	HORN ANT	ETS	3115	11/09/06	12/09/06	21097
☐	HORN ANT	ETS	3115	12/02/20	13/02/20	6419
☐	HORN ANT	A.H.Systems	SAS-574	11/03/25	13/03/25	154
☐	HORN ANT	A.H.Systems	SAS-574	11/03/25	13/03/25	155
☐	Dipole Antenna	Schwarzbeck	VHA9103	12/03/12	13/03/12	2116
☐	Dipole Antenna	Schwarzbeck	VHA9103	11/11/22	12/11/22	2117
☐	Dipole Antenna	Schwarzbeck	UHA9105	12/03/12	13/03/12	2261
☐	Dipole Antenna	Schwarzbeck	UHA9105	11/11/22	12/11/22	2262
☒	LOOP Antenna	ETS	6502	10/10/29	12/10/29	3471
☐	Coaxial Fixed Attenuators	Agilent	8491B	12/07/02	13/07/02	MY39260700
☐	Attenuator (3dB)	WEINSCHEL	56-3	11/09/30	12/09/30	Y2342
☐	Attenuator (3dB)	WEINSCHEL	56-3	11/09/30	12/09/30	Y2370
☐	Attenuator (10dB)	WEINSCHEL	23-10-34	11/09/30	12/09/30	BP4386
☐	Attenuator (10dB)	WEINSCHEL	23-10-34	12/01/09	13/01/09	BP4387
☐	Attenuator (10dB)	WEINSCHEL	86-10-11	11/09/30	12/09/30	446
☐	Attenuator (10dB)	WEINSCHEL	86-10-11	11/09/30	12/09/30	408
☐	Attenuator (20dB)	WEINSCHEL	86-20-11	11/09/30	12/09/30	432
☐	Attenuator (30dB)	JFW	50FH-030-300	12/03/05	13/03/05	060320-1
☐	Attenuator (40dB)	WEINSCHEL	57-40-33	11/09/30	12/09/30	NN837
☐	Termination	H.P	HP-909D	12/07/01	13/07/01	02750
☐	Termination	H.P	HP-909D	12/07/01	13/07/01	02702

	Type	Manufacturer	Model	Cal.Date (yy/mm/dd)	Next.Cal.Date (yy/mm/dd)	S/N
☐	Type N Coaxial CIRCULATOR	NOVA MICROWAVE	0185CAN	12/07/01	13/07/01	790
☐	Amplifier (30dB)	Agilent	8449B	12/03/05	13/03/05	3008A01590
☐	Amplifier (30dB)	H.P	8449B	12/03/05	13/03/05	3008A00370
☐	Amplifier	EMPOWER	BBS3Q7ELU	11/09/30	12/09/30	1020
☐	RF Power Amplifier	OPHIRRF	5069F	12/07/01	13/07/01	1006
☒	EMI TEST RECEIVER	R&S	ESU	12/01/09	13/01/09	100014
☒	BILOG ANTENNA	SCHAFFNER	CBL 6112D	10/12/21	12/12/21	22609
☒	Amplifier (22dB)	H.P	8447E	12/01/09	13/01/09	2945A02865
☐	BICONICAL ANT.	Schwarzbeck	VHA 9103	10/11/29	12/11/29	91032789
☐	LOG-PERIODIC ANT.	Schwarzbeck	UHALP9108A1	10/11/29	12/11/29	1098
☐	BICONICAL ANT.	Schwarzbeck	VHA 9103	10/12/21	12/12/21	91031946
☐	LOG-PERIODIC ANT.	Schwarzbeck	UHALP9108A1	10/07/07	Calibrating	0590
☐	Low Noise Pre Amplifier	TSJ	MLA-100K01-B01-2	12/03/05	13/03/05	1252741
☐	Low Noise Pre Amplifier	TSJ	MLA-00108-B02-36	12/01/09	13/01/09	1518831
☐	Amplifier (25dB)	Agilent	8447D	12/07/01	13/07/01	2648A04922
☒	Spectrum Analyzer(CE)	H.P	8591E	12/03/05	13/03/05	3649A05889
☒	LISN	Kyoritsu	KNW-407	12/01/09	13/01/09	8-317-8
☐	Artificial Mains Network	Narda S.T.S. / PMM	PMM L2-16B	12/03/13	13/03/13	000WX20305
☒	CVCF	NF Electronic	4420	11/09/15	12/09/15	304935/4420023
☒	50 ohm Terminator	HME	CT-01	12/01/09	13/01/09	N/A
☒	RFI/FIELD Intensity Meter	Kyoritsu	KNM-2402	12/07/02	13/07/02	4N-170-3
☐	EMI Test Receiver	R&S	ECSI	12/03/05	13/03/05	100364
☐	LISN	R&S	ESH2-Z5	11/09/30	12/09/30	8287391006
☐	CVCF	NF Electronic	4420	12/03/05	13/03/05	304935/337980
☐	RFI/FIELD Intensity Meter	ES4152	424059	11/09/30	12/09/30	424059
☐	Wideband Radio Communication Tester	R&S	CMW500	11/09/30	12/09/30	100989