

RF TEST REPORT

Test item : Industrial PDA
Model No. : BIP-1530
Order No. : DEMC1206-00819
Date of receipt : 2012-06-04
Test duration : 2012-08-24 ~ 2012-08-30
Date of issue : 2012-09-21
Use of report : FCC Original Grant

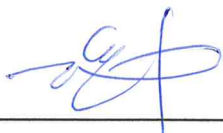
Applicant : Bluebird Soft Inc.
1242, Gaepo-dong ,Gangnam-Gu, Seoul, Korea

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:

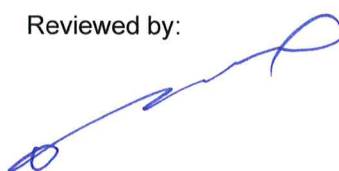


Engineer
H.H.LEE

Witnessed by:

N/A

Reviewed by:



Deputy General Manager
Will Lee

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1. Equipment information

1.1 Equipment description

FCC Equipment Class	Low Power Communications Device Transmitter(DXX)
Equipment type	Industrial PDA
Equipment model name	BIP-1530
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 7.4V
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 ~ 26 °C
Relative humidity content	: 42 ~ 60 % R.H.
Details of power supply	: Battery: DC 7.4 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
<p>Note 1: C=Comply NC=Not Comply NT=Not Tested NA=Not Applicable</p> <p>Note 2: This device was tested with external module(PINPAD).</p>				

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

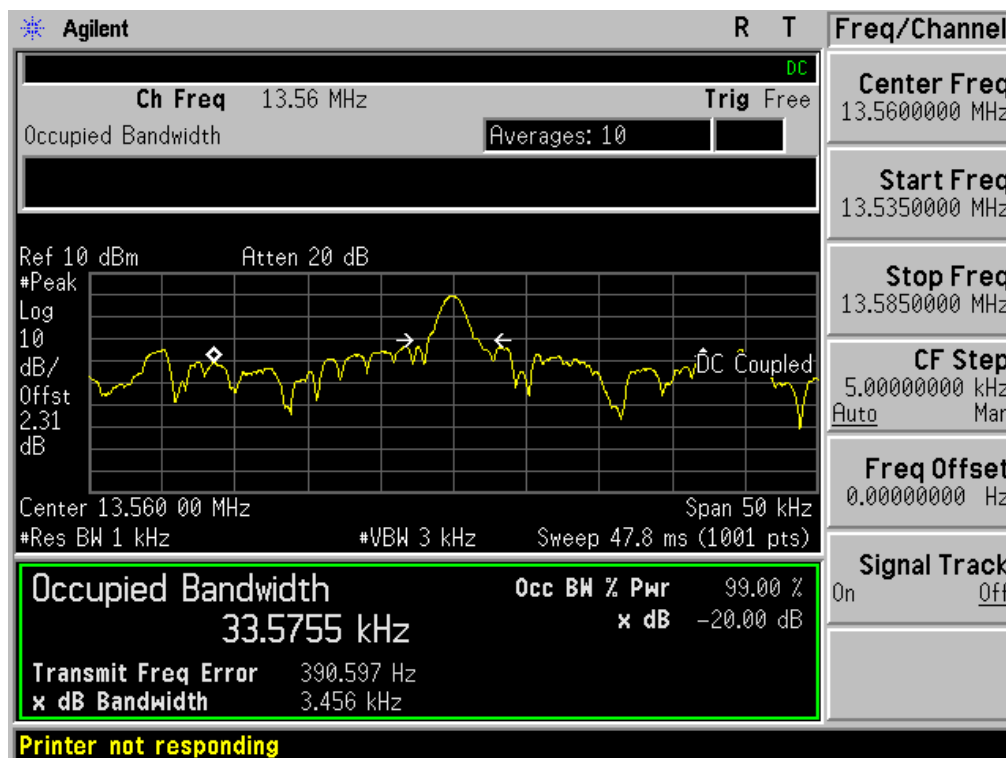
3.2 Transmitter requirements

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	13.404	Y	51.400	-13.00	38.40	-1.60	40.51	42.11
13.410 ~ 13.553	13.553	Y	71.900	-13.10	58.80	18.80	50.47	31.67
13.553 ~ 13.567	13.560	Y	77.000	-13.10	63.90	23.90	84.00	60.10
13.567 ~ 13.710	13.569	Y	69.800	-13.10	56.70	16.70	50.47	33.77
13.710 ~ 14.010	13.711	Y	54.300	-13.10	41.20	1.20	40.51	39.31

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	N/A	39.50	-15.30	40	-15.80	29.54	45.34
135.705	Y	V	49.60	-9.90	N/A	39.70	43.50	3.80
244.520	Y	H	48.10	-9.20	N/A	38.90	46.00	7.10
474.582	Y	V	47.50	-4.00	N/A	43.50	46.00	2.50
-	-	-	-	-	-	-	-	-

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 : 13,560,020 Hz

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	Frequency (Hz)	Freq. Dev. (Hz)	Deviation (%)
100%	7.400	+23(ref)	13,560,020	20	0.000147
100%		-20	13,560,134	134	0.000988
100%		-10	13,560,127	127	0.000937
100%		0	13,560,120	120	0.000885
100%		+10	13,560,007	7	0.000052
100%		+20	13,560,010	10	0.000074
100%		+30	13,559,983	-17	-0.000125
100%		+40	13,559,938	-62	-0.000457
100%		+50	13,559,940	-60	-0.000442
85%	6.290	+23	13,560,090	90	0.000664
115%	8.510	+23	13,560,100	100	0.000737
BATT.ENDPOINT	5.800	+23	13,560,132	132	0.000973

- 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

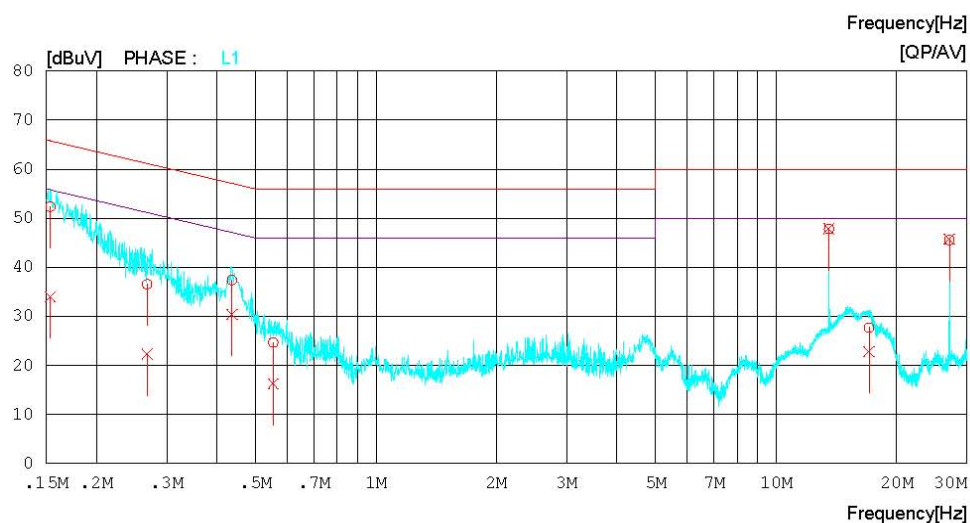
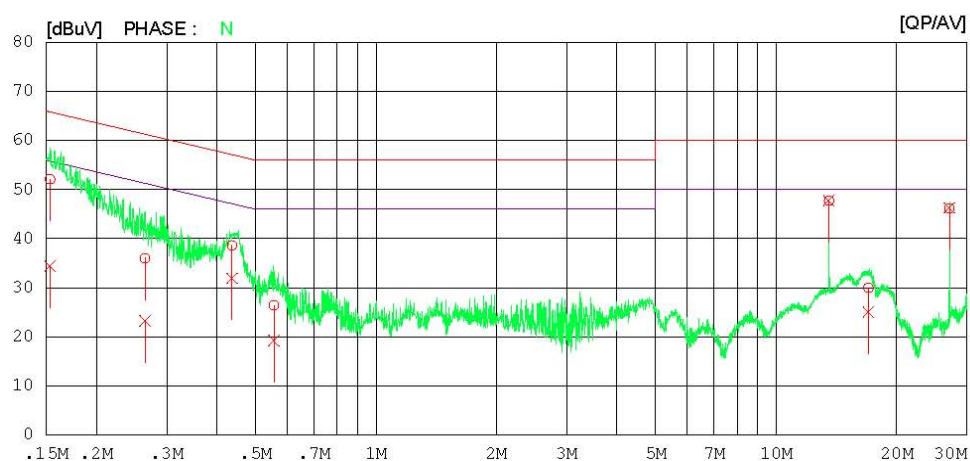
Digital EMC
Date : 2012-08-28

Model No. : BIP-1530
Type :
Serial No. :
Test Condition : NFC

Reference No. :
Power Supply : 120V 60Hz
Temp/Humi. : 26 °C 49 % R.H.
Operator :

Memo :

LIMIT : CISPR22_B QP
CISPR22_B AV



Results of Conducted Emission

Digital EMC
Date : 2012-08-28Model No. : BIP-1530
Type :
Serial No. :
Test Condition : NFCReference No. :
Power Supply : 120V 60Hz
Temp/Humi. : 26 'C 49 % R.H
Operator :

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	0.15336	51.8	34.1	0.3	52.1	34.4	65.8	55.8	13.7	21.4	N
2	0.26471	35.8	23.0	0.2	36.0	23.2	61.3	51.3	25.3	28.1	N
3	0.43645	38.4	31.7	0.2	38.6	31.9	57.1	47.1	18.5	15.2	N
4	0.55576	26.2	19.0	0.2	26.4	19.2	56.0	46.0	29.6	26.8	N
5	13.56000	46.8	46.8	0.9	47.7	47.7	60.0	50.0	12.3	2.3	N
6	17.01400	28.8	24.0	1.1	29.9	25.1	60.0	50.0	30.1	24.9	N
7	27.12000	44.8	45.0	1.3	46.1	46.3	60.0	50.0	13.9	3.7	N
8	0.15353	52.0	33.7	0.3	52.3	34.0	65.8	55.8	13.5	21.8	L1
9	0.26804	36.4	22.1	0.2	36.6	22.3	61.2	51.2	24.6	28.9	L1
10	0.43658	37.2	30.2	0.2	37.4	30.4	57.1	47.1	19.7	16.7	L1
11	0.55366	24.5	16.1	0.2	24.7	16.3	56.0	46.0	31.3	29.7	L1
12	13.56000	46.9	47.0	0.9	47.8	47.9	60.0	50.0	12.2	2.1	L1
13	17.07050	26.6	21.7	1.1	27.7	22.8	60.0	50.0	32.3	27.2	L1
14	27.11950	44.3	44.4	1.3	45.6	45.7	60.0	50.0	14.4	4.3	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
<input checked="" type="checkbox"/>	Spectrum Analyzer	Agilent	E4440A	12/09/18	13/09/18	MY45304199
<input type="checkbox"/>	Spectrum Analyzer	Rohde Schwarz	FSQ26	12/01/09	13/01/09	200445
<input type="checkbox"/>	Spectrum analyzer	Agilent	E4404B	12/03/05	13/03/05	US41061134
<input type="checkbox"/>	Spectrum Analyzer(RE)	H.P	8563E	11/10/04	12/10/04	3551A04634
<input type="checkbox"/>	MXA Signal Analyzer	Agilent Technologies, Inc	N9020A	12/01/09	13/01/09	MY49100833
<input type="checkbox"/>	Spectrum Analyzer	Agilent	E4440A	11/10/11	12/10/11	US45303022
<input type="checkbox"/>	Power Meter	H.P	EPM-442A	12/07/01	13/07/01	GB37170413
<input type="checkbox"/>	Power Sensor	H.P	8481A	12/07/01	13/07/01	3318A96332
<input type="checkbox"/>	Virtual Power Meter(S/W)	Rohde Schwarz	R&S Power Viewer Plus	-	-	V 4.1.0
<input type="checkbox"/>	Power Divider	Agilent	11636B	12/09/17	13/09/17	56471
<input type="checkbox"/>	4-Way Power Divider	ET Industries	D-0526-4	11/12/01	12/12/01	210195001
<input type="checkbox"/>	Power Splitter	Anritsu	K241B	12/09/17	13/09/17	020611
<input type="checkbox"/>	Power Splitter	Anritsu	K241B	12/07/01	13/07/01	017060
<input type="checkbox"/>	Power Splitters & Dividers	Aeroflex/Weinschel	1594	12/02/07	13/02/07	1177
<input type="checkbox"/>	Frequency Counter	H.P	5342A	12/07/01	13/07/01	2119A04450
<input checked="" type="checkbox"/>	TEMP & HUMIDITY Chamber	JISCO	KR-100/J-RHC2	12/09/17	13/09/17	30604493/021031
<input type="checkbox"/>	TEMP & HUMIDITY Chamber	SJ SCIENCE	TEMI850-10	12/03/06	13/03/06	S7400LE267 1226
<input checked="" type="checkbox"/>	Digital Multimeter	H.P	34401A	12/03/05	13/03/05	3146A13475, US36122178
<input type="checkbox"/>	Multifunction Synthesizer	HP	8904A	11/10/06	12/10/06	3633A08404
<input type="checkbox"/>	Signal Generator	Rohde Schwarz	SMR20	12/03/05	13/03/05	101251
<input type="checkbox"/>	Signal Generator	H.P	ESG-3000A	12/07/01	13/07/01	US37230529
<input checked="" type="checkbox"/>	Vector Signal Generator	Rohde Schwarz	SMJ100A	12/01/09	13/01/09	100148
<input type="checkbox"/>	Vector Signal Generator	Rohde Schwarz	SMBV100A	12/01/09	13/01/11	255571
<input type="checkbox"/>	Audio Analyzer	H.P	8903B	12/07/02	13/07/02	3011A09448
<input type="checkbox"/>	Modulation Analyzer	H.P	8901B	12/07/01	13/07/01	3028A03029
<input type="checkbox"/>	8960 Series 10 Wireless Comms. Test Set	Agilent	E5515C	12/03/05	13/03/05	GB43461134
<input type="checkbox"/>	Universal Radio communication Tester	Rohde Schwarz	CMU200	12/03/06	13/03/06	106760
<input type="checkbox"/>	Bluetooth Tester	TESCOM	TC-3000B	12/07/01	13/07/01	3000B640046
<input type="checkbox"/>	Thermo hygrometer	BODYCOM	BJ5478	12/01/13	13/01/13	090205-3
<input checked="" type="checkbox"/>	Thermo hygrometer	BODYCOM	BJ5478	12/01/13	13/01/13	090205-2
<input type="checkbox"/>	Thermo hygrometer	BODYCOM	BJ5478	12/01/13	13/01/13	090205-4
<input type="checkbox"/>	Thermo hygrometer	BODYCOM	BJ5478	12/06/20	13/06/20	120612-1
<input type="checkbox"/>	Thermo hygrometer	BODYCOM	BJ5478	12/06/20	13/06/20	120612-2
<input type="checkbox"/>	AC Power supply	DAEKWANG	5KVA	12/03/05	13/03/05	20060321-1
<input checked="" type="checkbox"/>	DC Power Supply	HP	6622A	12/03/05	13/03/05	3448A03760
<input type="checkbox"/>	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
<input type="checkbox"/>	DC Power Supply	Protek	PWS-3010D	N/A	N/A	4542040
<input type="checkbox"/>	DC Power Supply	SM techno	SDP30-5D	12/06/08	13/06/08	305DKA013
<input type="checkbox"/>	BAND Reject Filter	Microwave Circuits	N0308372	12/09/17	13/09/17	3125-01DC0352
<input type="checkbox"/>	BAND Reject Filter	Wainwright	WRCG1750	12/09/17	13/09/17	2
<input type="checkbox"/>	High-Pass Filter	ANRITSU	MP526D	12/09/17	13/09/17	M27756
<input type="checkbox"/>	High-pass filter	Wainwright	WHNX2.1	12/09/17	13/09/17	1
<input type="checkbox"/>	High-pass filter	Wainwright	WHNX3.0	12/09/17	13/09/17	9
<input type="checkbox"/>	High-pass filter	Wainwright	WHNX5.0	12/09/17	13/09/17	8
<input type="checkbox"/>	High-Pass Filter	Wainwright	WHKX8.5	12/09/17	13/09/17	1
<input type="checkbox"/>	High-Pass Filter	Wainwright	WHKX1.0	12/09/17	13/09/17	9
<input type="checkbox"/>	Tunable Notch Filter	Wainwright	WRCT800.0 /960.0-0.2/40-8SSK	N/A	N/A	32
<input type="checkbox"/>	Tunable Notch Filter	Wainwright	WRCD1700.0 /2000.0-0.2/40-10SSK	N/A	N/A	53
<input type="checkbox"/>	Tunable Notch Filter	Wainwright	WRCT1900.0/ 2200.0-5/40-10SSK	N/A	N/A	30
<input type="checkbox"/>	HORN ANT	ETS	3115	11/09/06	Calibrating	21097
<input type="checkbox"/>	HORN ANT	ETS	3115	12/02/20	13/02/20	6419
<input type="checkbox"/>	HORN ANT	A.H.Systems	SAS-574	11/03/25	13/03/25	154
<input type="checkbox"/>	HORN ANT	A.H.Systems	SAS-574	11/03/25	13/03/25	155
<input type="checkbox"/>	Dipole Antenna	Schwarzbeck	VHA9103	12/03/12	13/03/12	2116
<input type="checkbox"/>	Dipole Antenna	Schwarzbeck	VHA9103	11/11/22	12/11/22	2117
<input type="checkbox"/>	Dipole Antenna	Schwarzbeck	UHA9105	12/03/12	13/03/12	2261
<input type="checkbox"/>	Dipole Antenna	Schwarzbeck	UHA9105	11/11/22	12/11/22	2262
<input checked="" type="checkbox"/>	LOOP Antenna	ETS	6502	10/10/29	12/10/29	3471
<input type="checkbox"/>	Coaxial Fixed Attenuators	Agilent	8491B	12/07/02	13/07/02	MY39260700
<input type="checkbox"/>	Attenuator (3dB)	WEINSCHEL	56-3	12/09/17	13/09/17	Y2342
<input type="checkbox"/>	Attenuator (3dB)	WEINSCHEL	56-3	12/09/17	13/09/17	Y2370
<input type="checkbox"/>	Attenuator (10dB)	WEINSCHEL	23-10-34	12/09/17	13/09/17	BP4386
<input type="checkbox"/>	Attenuator (10dB)	WEINSCHEL	23-10-34	12/09/17	13/09/17	BP4387
<input type="checkbox"/>	Attenuator (10dB)	WEINSCHEL	86-10-11	12/09/17	13/09/17	446
<input type="checkbox"/>	Attenuator (10dB)	WEINSCHEL	86-10-11	12/09/17	13/09/17	408
<input type="checkbox"/>	Attenuator (20dB)	WEINSCHEL	86-20-11	12/09/17	13/09/17	432
<input type="checkbox"/>	Attenuator (30dB)	JFW	50FH-030-300	12/03/05	13/03/05	060320-1
<input type="checkbox"/>	Attenuator (40dB)	WEINSCHEL	57-40-33	12/09/17	13/09/17	NN837
<input type="checkbox"/>	Termination	H.P	HP-909D	12/07/01	13/07/01	02750
<input type="checkbox"/>	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
<input type="checkbox"/>	Type N Coaxial CIRCULATOR	NOVA MICROWAVE	0185CAN	12/07/01	13/07/01	790
<input type="checkbox"/>	Amplifier (30dB)	Agilent	8449B	12/03/05	13/03/05	3008A01590
<input type="checkbox"/>	Amplifier (30dB)	H.P	8449B	12/03/05	13/03/05	3008A00370
<input type="checkbox"/>	Amplifier	EMPOWER	BBS3Q7ELU	12/09/18	13/09/18	1020
<input type="checkbox"/>	RF Power Amplifier	OPHIRRF	5069F	12/07/01	13/07/01	1006
<input checked="" type="checkbox"/>	EMI TEST RECEIVER	R&S	ESU	12/01/09	13/01/09	100014
<input checked="" type="checkbox"/>	BILOG ANTENNA	SCHAFFNER	CBL 6112D	10/12/21	12/12/21	22609
<input checked="" type="checkbox"/>	Amplifier (22dB)	H.P	8447E	12/01/09	13/01/09	2945A02865
<input type="checkbox"/>	EMI TEST RECEIVER	R&S	ESCI	12/03/06	13/03/06	100364
<input type="checkbox"/>	BICONICAL ANT.	Schwarzbeck	VHA 9103	10/11/29	12/11/29	91032789
<input type="checkbox"/>	LOG-PERIODIC ANT.	Schwarzbeck	UHALP9108A1	10/11/29	12/11/29	1098
<input type="checkbox"/>	BICONICAL ANT.	Schwarzbeck	VHA 9103	10/12/21	12/12/21	91031946
<input type="checkbox"/>	LOG-PERIODIC ANT.	Schwarzbeck	UHALP9108A1	10/07/07	Calibrating	0590
<input type="checkbox"/>	Low Noise Pre Amplifier	TSJ	MLA-100K01-B01-2	12/03/05	13/03/05	1252741
<input type="checkbox"/>	Low Noise Pre Amplifier	TSJ	MLA-00108-B02-36	12/01/09	13/01/09	1518831
<input type="checkbox"/>	Amplifier (25dB)	Agilent	8447D	12/07/01	13/07/01	2648A04922
<input type="checkbox"/>	Spectrum Analyzer(CE)	H.P	8591E	12/03/05	13/03/05	3649A05889
<input type="checkbox"/>	LISN	Kyoritsu	KNW-407	12/01/09	13/01/09	8-317-8
<input type="checkbox"/>	Artificial Mains Network	Narda S.T.S. / PMM	PMM L2-16B	12/03/13	13/03/13	000WX20305
<input type="checkbox"/>	CVCF	NF Electronic	4420	12/09/15	13/09/15	304935/4420023
<input type="checkbox"/>	50 ohm Terminator	HME	CT-01	12/01/09	13/01/09	N/A
<input type="checkbox"/>	RFI/FIELD Intensity Meter	Kyoritsu	KNM-2402	12/07/02	13/07/02	4N-170-3
<input checked="" type="checkbox"/>	EMI Test Receiver	R&S	ECSI	12/03/05	13/03/05	100364
<input checked="" type="checkbox"/>	ARTIFICIAL MAINS NETWORK	R&S	ESH2-Z5	12/09/18	13/09/18	828739/006
<input checked="" type="checkbox"/>	CVCF	NF Electronic	4420	12/03/05	13/03/05	304935/337980
<input checked="" type="checkbox"/>	RFI/FIELD Intensity Meter	ES4152	424059	12/09/17	13/09/17	424059
<input type="checkbox"/>	Wideband Radio Communication Tester	R&S	CMW500	12/09/18	13/09/18	100989