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FCC TEST REPORT

Under
FCC Part 22 Subpart H & 24 Subpart E
RSS 132, Issue 2 & RSS 133, Issue 3

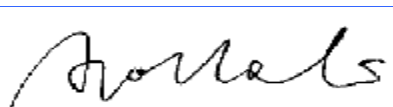
Prepared For :

Jabil Circuit (Wuxi) Co., Ltd.

Lot J9, J10 Export Preprocessing Zone, Wuxi City, Jiangsu Province P.R.C

FCC ID: X9E-DMCXACT
EUT: GPS Tracker
Model: DMC XACT PT MODULE

April 6, 2010

Report Type: Original Report
Test Engineer: <u>Jacky Huang</u>
Test Date: <u>March 12, 2010</u>
 Review By: _____ Apollo Liu / Manager

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1. General Information

1.1 Notes

The test results of this report relate exclusively to the test item specified in 1.5. The KMO Lab does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of the KMO Lab.

1.2 Testing Laboratory

Site on File with the Federal Communications Commission – United States
Registration Number: 963441

Site Listed with Industry Canada of Ottawa, Canada
Registration Number: 7353A

1.3 Details of Applicant

Name : Jabil Circuit (Wuxi) Co., Ltd.
Address : Lot J9,J10 Export Preprocessing Zone, Wuxi City, Jiangsu Province.
Contact : N/A
Tel : N/A
Fax : N/A

1.4 Application Details

Date of Receipt of Application : March 3, 2010
Date of Receipt of Test Item : March 3, 2010
Date of Test : March 12~April 6, 2010

1.5 Test Item

Manufacturer : Same Applicant
Trade Name : N/A
Model No. : DMC XACT PT MODULE
Description : GPS Tracker

Additional Information

Frequency : GSM824.2MHz~848.8MHz & PCS1850.2MHz~1909.8MHz
RF Power : GSM850 ERP: 28.6dBm; PCS1800 EIRP: 30.1dBm
Number of Channels : 125 (GSM850); 300 (PCS1900)
Type of Modulation : 300KGXW (GMSK)
Power Supply : DC 12V
Dimension : N/A
Weight : N/A

1.6 Test Standards

FCC Part 22 Subpart H & 24 Subpart E and RSS 132, Issue 2 & RSS 133, Issue 3
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Note: All radiated measurements were made in all three orthogonal planes. The values reported are the maximum values.

2. Technical Test

2.1 Summary of Test Results

The EUT has been tested according to the following specifications:

Standard	Test Type	Result	Notes
FCC Part 15, Paragraph 15.107 & 15.207 and 7.2.2(RSS-GEN)	AC Line Conducted Emission	PASS	Complies
FCC 2.1046(a)	RF Output Power	PASS	Complies
FCC 22.913(a) & FCC 24.232(a) and RSS-132:4.4 SRSP-503:5.1.3 & RSS-133:6.4 SRSP-510:5.1.2	EIRP	PASS	Complies
FCC 2.1049(h) & FCC22.917(a) & FCC24.238(a) and RSS Gen: 4.6.1	Occupied Bandwidth & Band Edge	PASS	N/A, see note
FCC 2.1051 & 22.917(a) & 24.238(a) and RSS-132:4.5.1 & RSS133:6.5.1	Conducted Emission	PASS	N/A, see note
FCC 2.1053 & 22.917(a) & 24.238(a) and RSS-Gen:4.11 & RSS-210:Table 3 & RSS-310: Table 4 & RSS-132:4.5.1 & RSS-133:6.5.1	Field Strength of Spurious Radiation	PASS	Complies.
FCC 2.1055(a)(1)(b) and RSS-132:4.3 & RSS-133:6.3	Frequency Stability Vs. Temperature	PASS	N/A, see note
FCC 2.1055(d)(1)(2) and RSS-132:4.3 & RSS-133:6.3	Frequency Stability Vs. Voltage	PASS	N/A, see note
FCC 2.1051 & 15.109 & FCC15.33 & FCC15.35 and RSS-132:4.6 & RSS-Gen:6(a) & RSS-133:6.7(a) & RSS-Gen: 6(b) & RSS132:4.6 & RSS133:6.7(b)	Receiver Spurious Emissions	PASS	Complies.
FCC 2.1091 & RSS-102	RF Exposure Evaluation	PASS	Complies.

2.2 Antenna Requirement

According to Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

The EUT no antenna connector for printed antenna. This is permanently attached antenna and meets the requirements of this section.

7.1.4(RSS-GEN) - A transmitter can only be sold or operated with antennas with which it was certified. A transmitter may be certified with multiple antenna types. An antenna type comprises antennas having similar in-band and out-of-band radiation patterns. Testing shall be performed using the highest-gain antenna of each combination of transmitter and antenna type for which certification is being sought, with the transmitter output power set at the maximum level. Any antenna of the same type and having equal or lesser gain as an antenna that had been successfully tested for certification with the transmitter, will also be considered certified with the transmitter, and may be used and marketed with the transmitter. The manufacturer shall include with the application for certification a list of acceptable antenna types to be used with the transmitter.

2.3 EUT Modification

No modification by test lab.

3. Technical Characteristics Test

3.1 Conducted Emission Test

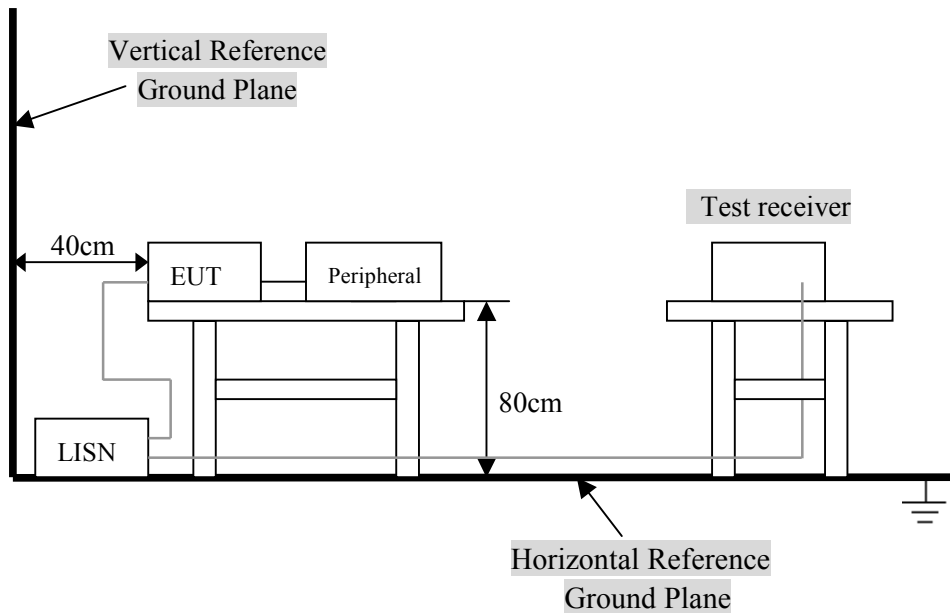
3.1.1 Test Equipment

Please refer to Section 6 this report.

3.1.2 Test Procedure

The EUT was tested according to ANSI C63.4 - 2003. The frequency spectrum from 0.15 MHz to 30 MHz was investigated. The LISN used was 50 ohm / 50 uHenry as specified by section 5.1 of ANSI C63.4 - 2003. cables and peripherals were moved to find the maximum emission levels for each frequency.

3.1.3 Test Setup



For the actual test configuration, Please refer to the related items – Photos of Testing.

3.1.4 Configuration of the EUT

Prepared in accordance with the requirements of the FCC Rules and Regulations Part 2. All measurements are peak unless stated otherwise. The video filter associated with the spectrum analyzer or receiver was off throughout evaluation process. Interconnecting cables were manipulated as necessary to maximize emissions. The EUT was configured according to ANSI C63.4-2003. EUT was used DC 12V. The operation frequency is from 824.2MHz~848.8MHz & 1850.2MHz~1909.8MHz. Enable the signal transmitted from the external antenna from EUT to receiver. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

* Associated Antenna Descriptions: The antenna used in this product is embedded antenna.

A. EUT

Device	Manufacturer	Model #	FCC ID
GPS Tracker	Jabil Circuit (Wuxi) Co., Ltd.	DMC XACT PT MODULE	X9E-DMCXACT

B. Internal Devices

Device	Manufacturer	Model #	FCC ID
N/A			

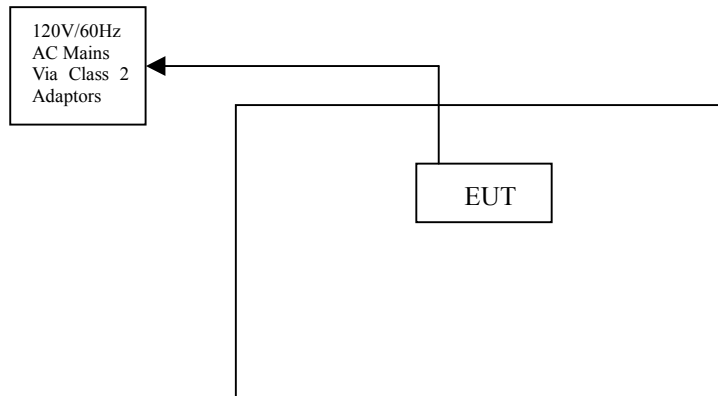
C. Peripherals

Device	Manufacturer	Model # Serial #	FCC ID/ DoC	Cable
Printer	HP	HP930C	DoC	1.5m unshielded power cord 1.2m unshielded data cable.
Modem	GVC	N/A	DoC	1.5m unshielded power cord 1.2m unshielded data cable.
Notebook	DELL	PP10L	DoC	1.5m unshielded power cord
PC	Dell	2400n	DoC	1.5m unshielded power cord

3.1.5 EUT Operating Condition

Operating condition is according to ANSI C63.4 - 2003.

- A. Setup the EUT and simulators as shown on follow.
- B. Enable RF signal and confirm EUT active.
- C. Modulate output capacity of EUT up to specification.



3.1.6 Conducted Power Line Emission Limits

FCC Part 15 Paragraph 15.207 (dBuV)		
Frequency Range (MHz)	Class A QP/AV	Class B QP/AV
0.15 – 0.5	79/66	66-56/56-46
0.5 – 5.0	73/60	56/46
5.0 - 30	73/60	60/50

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

3.1.7 Conducted Power Line Test Result

Product	: GPS Tracker	Test Mode	: Charging
Test Item	: Conducted Emission Data	Temperature	: 25 °C
Test Voltage	: DC 5V (From Host)	Humidity	: 56%RH
Test Result	: PASS		

The frequency spectrum from 0.15 MHz to 30 MHz was investigated. All readings are quasi -peak values with a resolution bandwidth of 9 KHz.

- Temperature : 26 °C
- Humidity : 53 % RH

FCC Part 15 Paragraph 15.207							
Frequency (MHz)	Emission (dBuV)		LINE/NEUTRAL	Limit (dBuV)		Margin (dB)	
	QP	AV		QP	AV	QP	AV
0.154	52.31	45.16	Line	65.78	55.78	-13.47	-10.62
0.162	52.26	45.53	Neutral	65.36	55.36	-13.10	-9.83
0.198	48.83	37.26	Line	63.69	53.69	-14.86	-16.43
0.206	48.13	39.74	Neutral	63.37	53.37	-15.24	-13.63
0.270	44.96	36.23	Line	61.12	51.12	-16.16	-14.89
0.278	44.18	35.24	Neutral	60.88	50.88	-16.70	-15.64

Note: NF = No Significant Peak was Found.

Note:

- 1.Uncertainty in conducted emission measured is <+/-2dB.
- 2.The emission levels of other frequencies were very low against the limit.
- 3.All Reading Levels are Quasi-Peak and Average value.
- 4.Emission = Meter Reading + Factor; Factor = Insertion Loss + Cable Loss.
- 5.Margin Value = Emission Level - Limit Value.

Conducted Emission

EN55022

EUT: GPS Tracker M/N:DMC XACT PT Module

Manufacturer: Jabil Circuit (Wuxi) Co., Ltd.

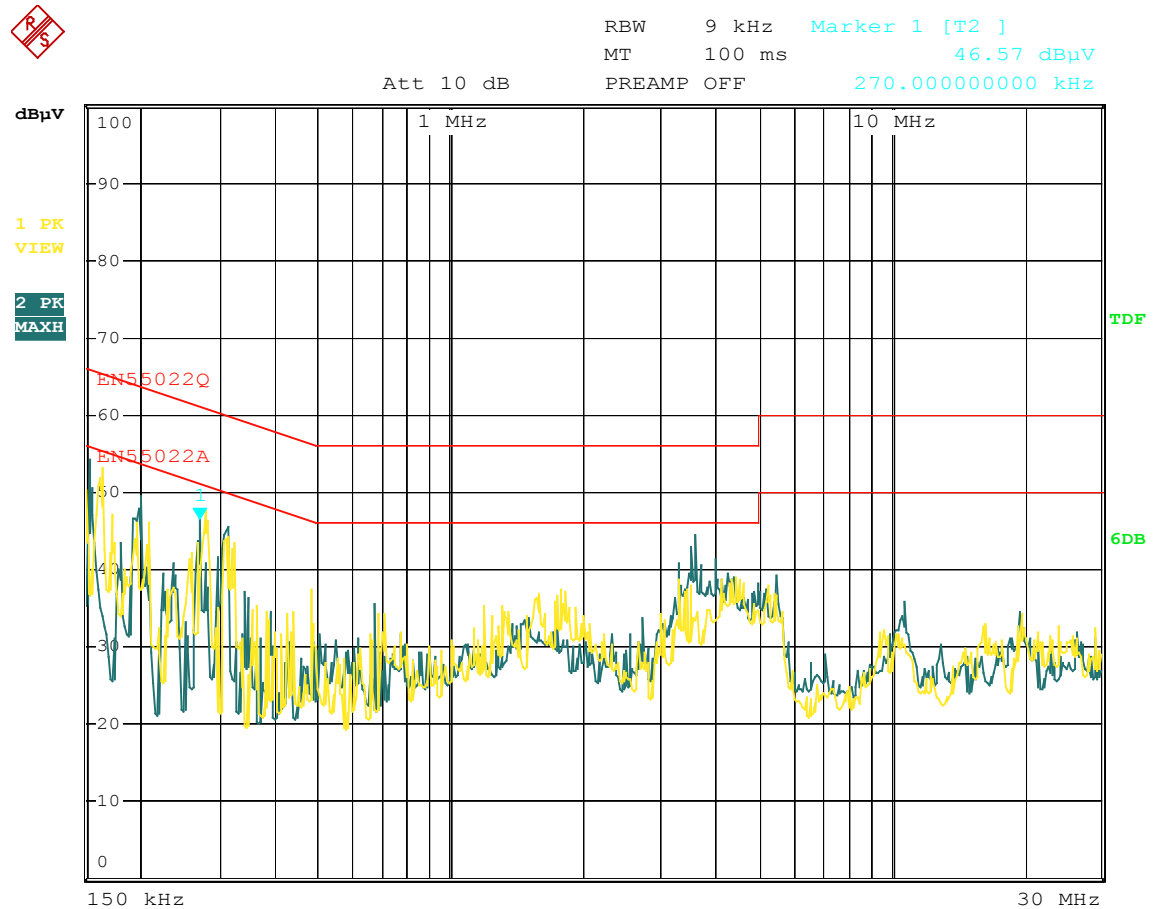
Operating Condition: Charging

Test Site: Normal

Operator: Jacky

Test Specification: LINE&NEUTRAL

Comment:



Date: 6.APR.2010 16:15:13

3. 2 RF Output Power

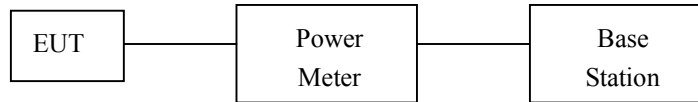
3.2.1 Test Equipment

Please refer to section 6 this report.

3.2.2 Test Procedure

The transmitter output was connected to power meter and base station through power divider. Set EUT at PCL=0 for Cellular Band through base station. Select lowest, middle, and highest channels for each band.

3.2.3 Test Setup



3.2.4 Configuration of The EUT

Same as section 3.1.4 of this report

3.2.5 EUT Operating Condition

Same as section 3.1.5 of this report

3.2.6 Limit

According to FCC 2.1046, FCC 22.913(a) Mobile station are limited to 7W; FCC 24.232(b) Mobile stations are limited to 2W eirp peak power.

3.2.7 RF Output Power Test Result

Product	: GPS Tracker	Test Mode	: CH Low ~ CH High
Test Item	: RF Output Power	Temperature	: 25 °C
Test Voltage	: DC 12V (External Power Supply)	Humidity	: 56%RH
Test Result	: PASS		

GSM850

Freq. (MHz)	Peak Output Power (dBm)	Average Output Power (dBm)
824.20	32.5	32.4
836.60	32.8	32.7
848.80	32.7	32.6

PCS1900

Freq. (MHz)	Peak Output Power (dBm)	Average Output Power (dBm)
1850.20	29.6	29.5
1880.00	29.4	29.3
1909.80	29.2	29.1

3.3 ERP / EIRP Measurement

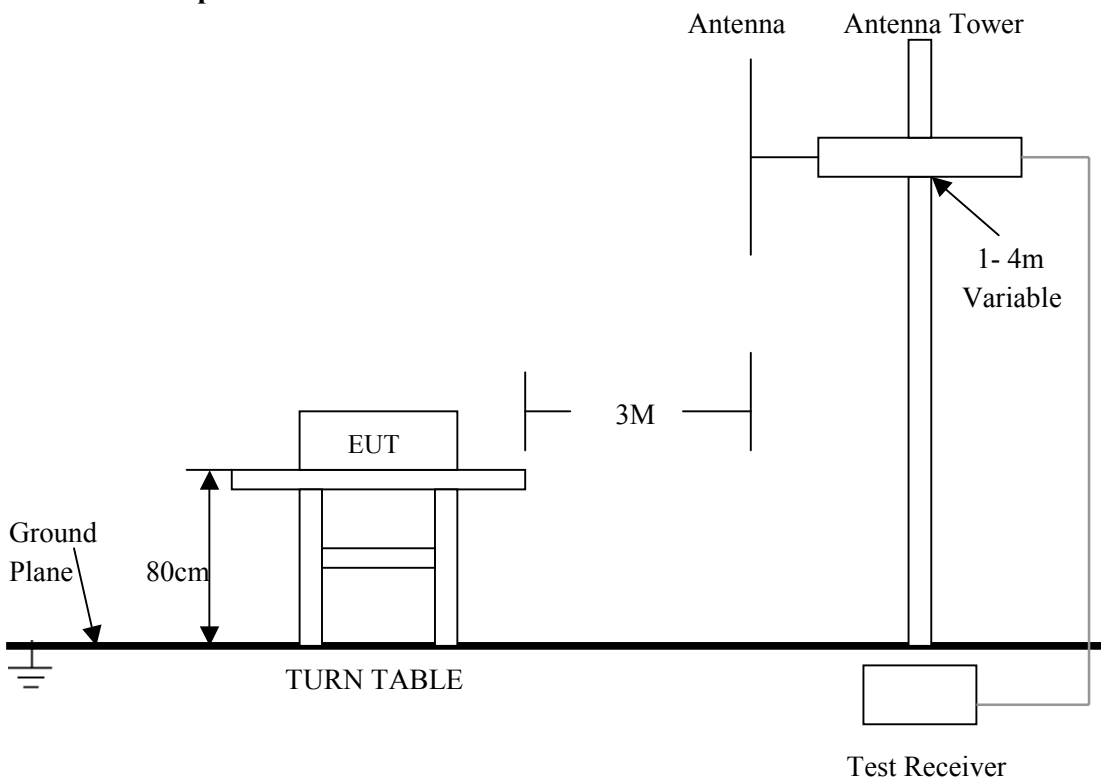
3.3.1 Test Equipment

Please refer to section 6 this report.

3.3.2 Test Procedure

1. Setup the configuration as section 3.3.3 this report test setup for frequencies measured below and above 1GHz respectively. adjusting the input voltage to produce the maximum power as measured.
2. Adjust the analyzer for each frequency measured in chapter 6 on a 1MHz frequency span and 1MHz resolution bandwidth.
3. The search antenna is to be raised and lowered over a range from 1 to 4 meters in horizontally polarized orientation. Position the highness when the highest value is indicated on test receiver, then change the orientation of EUT on test table over a range from 0 degree to 360 degree, and record the highest value indicated on test receiver as reference value.
4. Repeat step 3 until all frequencies need to be measured were complete.
5. Repeat step 4 with search antenna in vertical polarized orientations.
6. Replace the EUT with a tuned dipole antenna (horn antenna for above 1GHz) relative to each frequency in horizontally polarized orientation and as the same polarized orientation with search antenna. Connect the tuned dipole antenna to a standard signal generator(SG) via a low loss cable. Power on the SG and tune the right frequency in measuring as well as set SG at a appreciated output level. Rise and lower the search antenna to get the highest value on test receiver, and then hold this position. Adjust the SG output to get a identical value derived from step 3 on test receiver. Record this value for result calculated.
7. Repeat step 6 until all frequencies need to be measured were complete.
8. Repeat step 7 with both antenna (horn antenna for above 1 GHz) and search antenna in vertical polarized orientations.
Result calculation is as following:
Result = SG Reading + Cable Loss + Antenna Gain Corrected

3.3.3 Test Setup



For the actual test configuration, please refer to the related items – Photos of Testing.

3.3.4 Configuration of The EUT

Same as section 3.1.4 of this report

3.3.5 EUT Operating Condition

Same as section 3.1.5 of this report

3.3.6 Limit

According to FCC 2.1046, FCC 22.913(a) Mobile station are limited to 7W; FCC 24.232(b) Mobile stations are limited to 2W eirp peak power.

3.3.7 Test Result

Product	: GPS Tracker	Test Mode	: CH Low ~ CH High
Test Item	: ERP/EIRP Measurement	Temperature	: 25 °C
Test Voltage	: DC 12V (External Power Supply)	Humidity	: 56%RH
Test Result	: PASS		

GSM850

Frequency. (MHz)	Result (dBm)	Limit (dBm)
824.20	28.2	38.45
836.60	28.3	38.45
848.80	28.6	38.45

PCS1900

Frequency. (MHz)	Result (dBm)	Limit (dBm)
1850.20	30.1	33.00
1880.00	29.9	33.00
1909.80	29.8	33.00

3. 4 Occupied Bandwidth and Band Edge Measurement

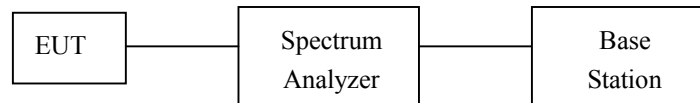
3.4.1 Test Equipment

Please refer to section 6 this report.

3.4.2 Test Procedure

The EUT was connected to Spectrum Analyzer and Base Station via power divider. The occupied bandwidth of middle channel for the highest RF powers was measured. The bandedge of low and high channels for the highest RF powers within the transmitting frequency band were measured. Setting RBW as roughly BW/10.

3.4.3 Test Setup



3.4.4 Configuration of The EUT

Same as section 3.1.4 of this report

3.4.5 EUT Operating Condition

Same as section 3.1.5 of this report

3.4.6 Limit

According to FCC 2.1053, FCC 22.917(a) & 24.238(a)

3.4.7 Occupied Bandwidth Test Result

Refer to the report of FCC ID: 09EWMP100

3.5 Radiated Spurious Emission

3.5.1 Test Equipment

Please refer to section 6 this report.

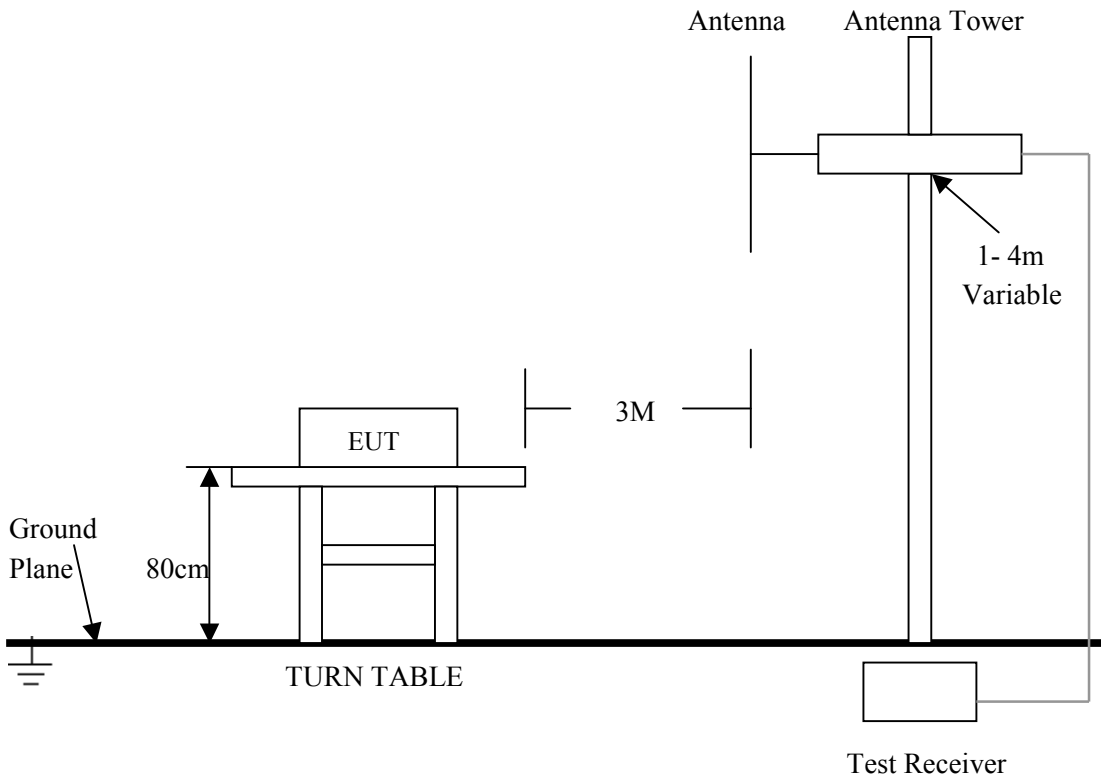
3.5.2 Test Procedure

The transmitter was placed on a wooden turntable and was transmitting in a non radiating dummy load which was directly connected to the antenna connector. The battery was replaced by monitored voltage source. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna was height and polarization as well as the EUT azimuth where varied in orders to identify the maximum level of emission from the EUT. The test was performed by placing the EUT on 3 orthogonal axis. The frequency range up to tenth harmonic of the fundamental frequency was investigated. Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution. All tests was performed for the lower, the middle and the highest frequency.

Spurious emissions in dB = $10 \lg(\text{Tx power in Watts}/0.001)$ – absolute level

Spurious attenuation limit in dB = $43 + 10 \lg(\text{power out in Watts})$

3.5.3 Test Setup



For the actual test configuration, please refer to the related items – Photos of Testing.

3.5.4 Configuration of The EUT

Same as section 3.1.4 of this report

3.5.5 EUT Operating Condition

Same as section 3.1.5 of this report

3.5.6 Limit

FCC Part 2.1053, and 24.238(a).

3.5.7 Radiated Spurious Emission Test Result

Product	: GPS Tracker	Test Mode	: CH Low ~ CH High
Test Item	: Radiated Spurious Emission	Temperature	: 25 °C
Test Voltage	: DC 12V (External Power Supply)	Humidity	: 56%RH
Test Result	: PASS		

GSM850 CH Low

Frequency (MHz)	Result (dBm) Hori. / Vert.		Limit (dBm)	Margin (dB) Hori. / Vert.	
824.0	-18.67	-26.54	-13	-5.67	-13.54
1648.5	-39.71	-45.93	-13	-26.71	-32.93
2472.8	-45.77	-49.44	-13	-32.77	-36.44
32.97.1	-41.46	-44.04	-13	-28.46	-31.04
-			-13		
-			-13		

Note: “-” means that the emission level is too low to be measured or at least 20 dB down than the limit.

GSM850 CH Middle

Frequency (MHz)	Result (dBm) Hori. / Vert.		Limit (dBm)	Margin (dB) Hori. / Vert.	
1673.0	-42.40	-41.97	-13	-29.40	-28.97
2509.5	-47.56	-48.33	-13	-34.56	-35.33
3346.1	-48.91	-47.91	-13	-35.91	-34.91
4182.6	-41.93	-42.79	-13	-29.93	-29.79
-			-13		
-			-13		

Note: “-” means that the emission level is too low to be measured or at least 20 dB down than the limit.

GSM850 CH High

Frequency (MHz)	Result (dBm) Hori. / Vert.		Limit (dBm)	Margin (dB) Hori. / Vert.	
849.0	-17.90	-23.97	-13	-4.90	-10.97
1697.7	-41.73	-40.48	-13	-28.73	-27.48
2546.6	-51.48	-49.99	-13	-38.48	-36.99
3395.5	-55.27	-50.10	-13	-42.27	-37.10
-			-13		
-			-13		

Note: “-” means that the emission level is too low to be measured or at least 20 dB down than the limit.

Rx

Freq. (MHz)	Emission (dBuV/m) QP Detector	HORIZ / VERT	Limits (dBuV/m)	Margin (dB)
51.620	17.69	HORZ	40.0	-22.31
78.230	18.06	VERT	40.0	-21.94
132.50	19.39	HORZ	40.0	-20.61
148.200	19.89	VERT	40.0	-20.11
312.800	23.87	HORZ	46.0	-22.13
954.300	25.86	VERT	43.5	-17.64

Note: (1) All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
 (2) Emission Level = Reading Level + Probe Factor + Cable Loss.

PCS1900 CH Low

Frequency (MHz)	Result (dBm) Hori. / Vert.		Limit (dBm)	Margin (dB) Hori. / Vert.	
1850.0	-20.63	-29.05	-13	-7.63	-16.05
3700.4	-49.21	-47.24	-13	-36.21	-34.24
5550.6	-46.07	-44.96	-13	-33.07	-31.96
7400.8	-43.64	-40.44	-13	-30.64	-27.44
-			-13		
-			-13		

Note: “-” means that the emission level is too low to be measured or at least 20 dB down than the limit.

PCS1900 CH Middle

Frequency (MHz)	Result (dBm) Hori. / Vert.		Limit (dBm)	Margin (dB) Hori. / Vert.	
3760.0	-47.06	-49.94	-13	-34.06	-36.94
5640.0	-46.65	-43.43	-13	-33.65	-30.43
7520.0	-43.47	-40.84	-13	-30.47	-27.84
9400.0	-	-	-13	-	-
-			-13		
-			-13		

Note: “-” means that the emission level is too low to be measured or at least 20 dB down than the limit.

PCS1900 CH High

Frequency (MHz)	Result (dBm) Hori. / Vert.		Limit (dBm)	Margin (dB) Hori. / Vert.	
1910.0	-24.08	-28.26	-13	-11.08	-15.26
3819.6	-45.90	-50.22	-13	-32.90	-37.22
5729.4	-47.79	-43.48	-13	-34.79	-30.48
-	-	-	-13	-	-
-			-13		
-			-13		

Note: “-” means that the emission level is too low to be measured or at least 20 dB down than the limit.

Rx

Freq. (MHz)	Emission (dBuV/m) QP Detector	HORIZ / VERT	Limits (dBuV/m)	Margin (dB)
52.640	16.59	HORZ	40.0	-23.41
81.260	17.38	VERT	40.0	-22.62
135.623	19.67	HORZ	40.0	-20.33
151.240	19.86	VERT	40.0	-20.14
316.500	23.78	HORZ	46.0	-22.22
967.640	25.60	VERT	43.5	-17.90

- Note:**
- (1) All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
 - (2) Emission Level = Reading Level + Probe Factor + Cable Loss.

3. 6 Conducted Emission

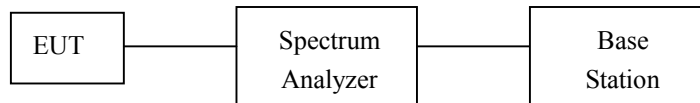
3.6.1 Test Equipment

Please refer to section 6 this report.

3.6.2 Test Procedure

The EUT was connected to Spectrum Analyzer and Base Station via power divider. The middle channel for the highest RF power within the transmitting frequency was measured. The conducted spurious emission for the whole frequency range was taken.

3.6.3 Test Setup



3.6.4 Configuration of The EUT

Same as section 3.1.4 of this report

3.6.5 EUT Operating Condition

Same as section 3.1.5 of this report

3.6.6 Limit

According to FCC 2.1049, on any frequency outside a license's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least $43 + 10\log(P)$ dB.

3.6.7 Spurious Emission on Antenna Port Test Result

Refer to the report of FCC ID: O9EWMP100

3.7 Frequency Stability

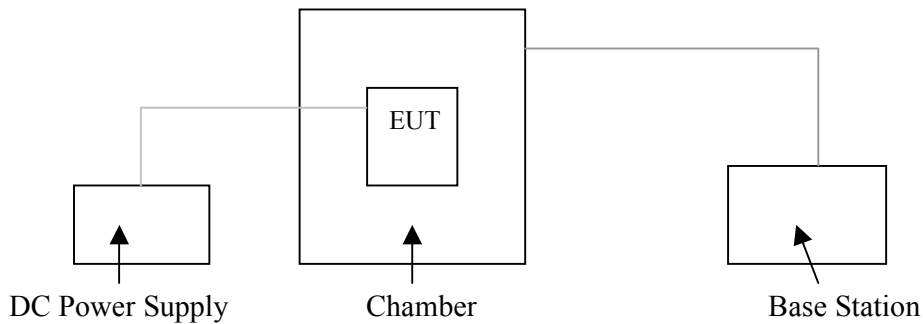
3.7.1 Test Equipment

Please refer to section 6 this report.

3.7.2 Test Procedure

The EUT was set in the climate chamber and connected to an external DC power supply. The RF output was directly connected to Base Station. The coupling loss of the additional cables was recorded and taken in account for all the measurements. After temperature stabilization (approx. 20 min for each stage), the frequency for the lower, the middle and the highest frequency range was recorded. For Frequency stability Vs. Voltage: An external variable DC power supply source. The voltage was set to 115% of the nominal value and was then decreased until the transmitter light no longer illuminated. The result was recorded.

3.7.3 Test Setup



3.7.4 Configuration of The EUT

Same as section 3.1.4 of this report

3.7.5 EUT Operating Condition

Same as section 3.1.5 of this report

3.7.6 Limit

FCC Part 2.1055(a), 2.1055(d), the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

3.7.7 Frequency Stability Test Result

Refer to the report of FCC ID: O9EWMP100

3.8 RF Exposure Requirements

3.8.1 Test Equipment

Please refer to section 6 this report.

3.8.2 Limit

According to FCC 1.1307(b)(1) and 2.1091, Systems operating under provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commissions guidelines.

FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in 1.1307(b).

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*100	6
3.0–30	1842/f	4.50/f	*100/f ²	6
30–300	61.4	0.163	1.0	6
300–1500			1/300	6
1500–100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*100	30
1.34–30	824/f	2.19/f	*180/f ²	30
30–300	27.5	0.073	0.2	30
300–1500			1/1500	30
1500–100,000			1.0	30

f = frequency in MHz

* = Plane-wave equivalent power density

NOTE 1 TO TABLE 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided these persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

NOTE 2 TO TABLE 1: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

IC Safety Code 6, Section 2.2.1 (a) A person other than an RF and microwave exposed worker shall not be exposed to electromagnetic radiation in a frequency band listed in Column 1 of Table 5, if the field strength exceed the value given in Column 2 or 3 of Table 5, when averaged spatially and over time, or if the power density exceeds the value give in Column 4 of Table 5, when averaged spatially and over time.

Table 5 Exposure Limits for Persons Not Classed As RF and Microwave Ex-posed Workers (Including the General Public)

1 Frequency (MHz)	2 Electric Field Strength; rms (V/m)	3 Magnetic Field Strength; rms (A/m)	4 Power Density (W/m ²)	5 Averaging Time (min)
0.003-1	280	2.19		6
1-10	280/f	2.19/f		6
10 - 30	28	2.19/f		6
30-300	28	0.073	2*	6
300-1 500	1.585f ^{0.5}	0.0042f ^{0.5}	f/150	6
1 500-15 000	61.4	0.163	10	6
15 000-150 000	61.4	0.163	10	616 000 /f ^{1.2}
150 000-300 000	0.158f ^{0.5}	4.21x 10 ⁻⁴ f ^{0.5}	6.67 x 10 ⁻⁵ f	616 000 /f ^{1.2}

* Power density limit is applicable at frequencies greater than 100 MHz.

Notes:

1. Frequency, f, is in MHz.

2. A power density of 10 W/m² is equivalent to 1 mW/cm².

3. A magnetic field strength of 1 A/m corresponds to 1.257 microtesla (μT) or 12.57 milligauss (mG).

3.8.3 Test Result

Product	: GPS Tracker	Test Mode	: CH Low ~ CH High
Test Item	: RF Exposure	Temperature	: 25 °C
Test Voltage	: DC 12V (Power by DC Power Supply)	Humidity	: 56%RH
Test Result	: PASS		

Evaluation of RF Exposure Compliance Requirements MPE Prediction of MPE according to equation from page 19 of OET Bulletin 65, Edition 97-01	
RF Exposure Requirements	Compliance with FCC Rules
<p>S=PG/4πR²</p> <p>Where: S=Power density P=Power input to antenna G=Power gain of the antenna relative to an isotropic radiator R=Distance to the center of radiation of the antenna</p>	<p>Maximum ERP (GSM850): 28.6dBm/724.436mW without taken into account the Duty Cycle, which is 1/8 for GSM devices. Antenna Gain (typical): 1.76 dBi Maximum antenna gain: 1 (numeric) Prediction distance: 20 cm Prediction frequency: 848.80MHz MPE limit for general population/uncontrolled exposure at prediction frequency: 0.56 mW/cm²</p> <p>Power density at 20 cm: 0.254 mW/cm²</p> <p>Maximum EIRP (PCS1800): 30.1dBm/1023.293mW without taken into account the Duty Cycle, which is 1/8 for GSM devices. Antenna Gain (typical): 2.46 dBi Maximum antenna gain: 1 (numeric) Prediction distance: 20 cm Prediction frequency: 1850.20MHz MPE limit for general population/uncontrolled exposure at prediction frequency: 1.00 mW/cm²</p> <p>Power density at 20 cm: 0.501 mW/cm²</p>

8. Photos of Testing

8.1 EUT Test Photographs

Conducted emission test view



Radiated emission test view



8. 2 EUT Detailed Photographs

EUT top view



EUT bottom view



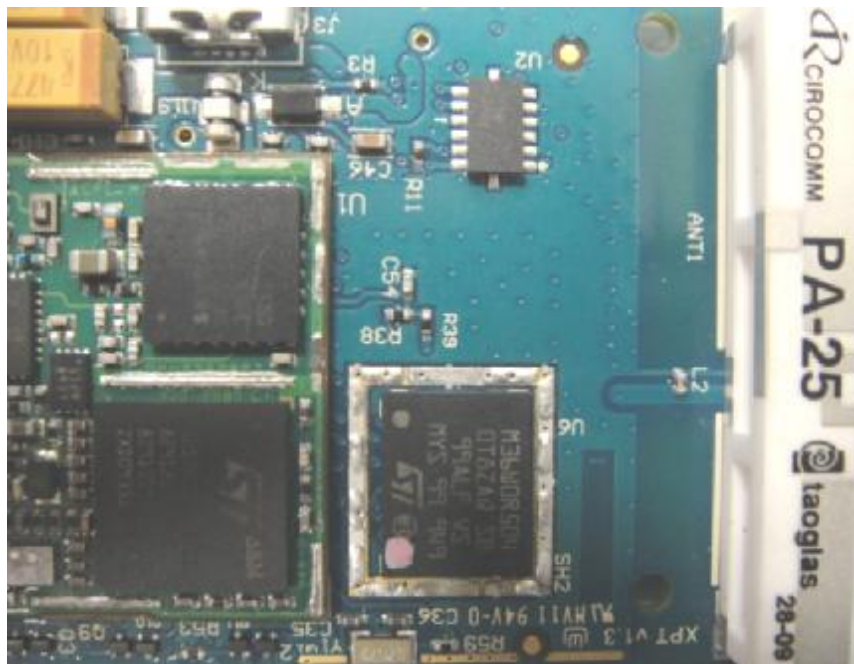
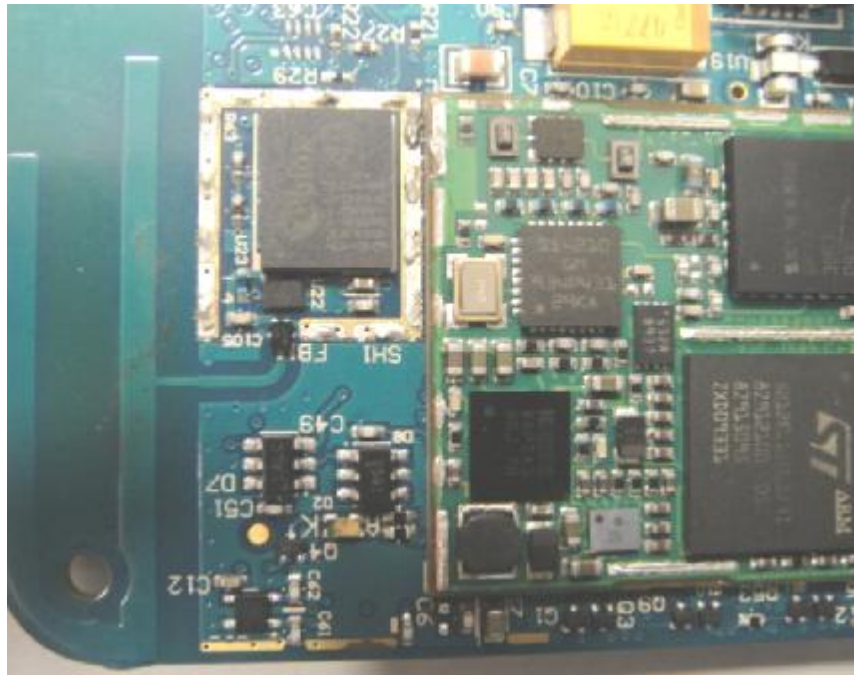
EUT inside whole view



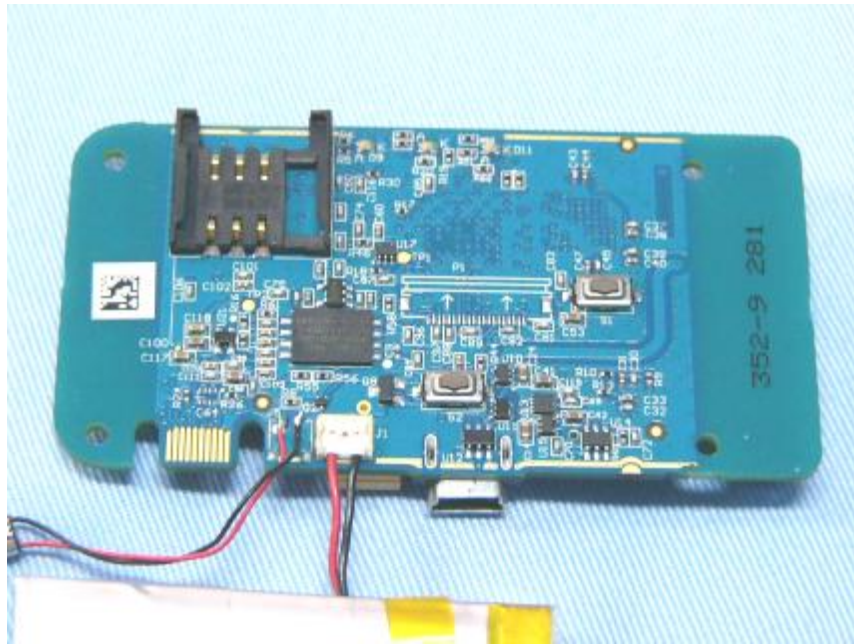
Main board component side







Main board solder side



9. FCC ID Label

FCC ID: X9E-DMCXACT

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The Label must not be a stick-on paper label. The Label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

Proposed Label Location on EUT

EUT Bottom View/Proposed FCC ID Label Location



10. Test Equipment

The following test equipments were used during the radiated & conducted emission test:

Equipment/ Facilities	Manufacturer	Model #	Serial No.	Due Date
Turntable	SinTek	N/A	N/A	NCR
Antenna Tower	SinTek	N/A	N/A	NCR
OATS	SinTek	N/A	N/A	Oct. 9, 2010
Bilog Antenna	SCHAFFNER	CBL6111C	2775	June 12, 2010
Pre-Amplifier	HP	8449B	3008B00965	June 12, 2010
Horn Antenna	EMCO	3115	9602-4659	June 12, 2010
Horn Antenna	Rohde & Schwarz	AT4560	SB3435/03	May 4, 2010
EMI Test Receiver	Rohde & Schwarz	ESPI7	100013	July 09, 2010
Spectrum Analyzer	Rohde & Schwarz	FSP40	100273	Sep.18, 2010
Signal Generator	FLUKE	PM5418+Y/C	LO747012	Feb.10, 2011
Loop Antenna	Rohde & Schwarz	HFH2-Z2	872096/16	Jan. 30, 2011
Trilog-Super Broadband Antenna	SCHWARZBECK	VULB9161	9161-4079	Sep.18, 2010
Trilog-Super Broadband Antenna	SCHWARZBECK	VULB9161	9161-4080	Sep.18, 2010
Broad-Band Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-564	Sep.18, 2010
Broad-Band Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-565	Sep.18, 2010
AMN	Rohde & Schwarz	ESH3-Z5	100196	Oct. 23, 2010
AMN	Rohde & Schwarz	ESH3-Z5	100197	Oct. 23, 2010
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	N/A	N/A
KMO Shielded Room	KMO	KMO-001	N/A	N/A
Coaxial Cable with N-Connectors	SCHWARZBECK	AK9515H	95549	Sep.18, 2010
Radio Communication Test Set	Rohde & Schwarz	CMS 54	846621/024	Feb.10, 2011
Modulation Analyzer	Hewlett-Packard	8901B	2303A00362	Feb.10, 2011
SOHO Telephone Switching System	IKE	2000-108C	N/A	Feb.10, 2011
Temperature Chamber	TABAI	PSL-4GTW	N/A	Feb.10, 2011