

FCC Test Report

APPLICANT : Foxconn International Holdings Ltd.
EQUIPMENT : Data Card
BRAND NAME : Ambit
MODEL NAME : NFF
MARKETING NAME : Ambit NFF
FCC ID : RYQ-NFF
STANDARD : FCC 47 CFR FCC Part 15 Subpart B
CLASSIFICATION : Certification

The product was received on Jan. 24, 2013 and completely tested on Feb. 19, 2013. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2003 and shown the compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.



Reviewed by: Louis Wu / Manager



Approved by: Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

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FCC ID : RYQ-NFF

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REVISION HISTORY

[illegible]

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.109	6.2	Radiated Emission	< 15.109 limits < ICES003 6.2 limits	PASS	Under limit 14.34 dB at 30.000 MHz

1. General Description

1.1. Applicant

Foxconn International Holdings Ltd.

No. 4, Mingsheng St., Tu-Cheng Dist., New Taipei City 23679, Taiwan (R.O.C.)

1.2. Manufacturer

Foxconn International Holdings Ltd.

No. 4, Mingsheng St., Tu-Cheng Dist., New Taipei City 23679, Taiwan (R.O.C.)

1.3. Feature of Equipment Under Test

Product Feature	
Equipment	Data Card
Brand Name	Ambit
Model Name	NFF
Marketing Name	Ambit NFF
FCC ID	RYQ-NFF
EUT supports Radios application	GPRS/EGPRS/WCDMA/HSPA
HW Version	PR3
SW Version	V13.05
EUT Stage	Production Unit

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

1.4. Product Specification of Equipment Under Test

Product Specification subjective to this standard	
Tx Frequency	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz WCDMA Band IV : 1712.4 MHz ~ 1752.6 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz
Rx Frequency Range	GSM850: 869.2 MHz ~ 893.8 MHz GSM1900: 1930.2 MHz ~ 1989.8 MHz WCDMA Band V: 871.4 MHz ~ 891.6 MHz WCDMA Band IV : 1712.4 MHz ~ 1752.6 MHz WCDMA Band II: 1932.4 MHz ~ 1987.6 MHz GPS : 1.57542 GHz
Type of Modulation	GPRS: GMSK EDGE(MCS 0-4): GMSK / (MCS 5-9): 8PSK WCDMA: QPSK (Uplink) HSDPA: QPSK (Uplink) HSUPA: QPSK (Uplink) GPS : BPSK

1.5. Modification of EUT

No modifications are made to the EUT during all test items.

1.6. Test Site

Test Site	SPORTON INTERNATIONAL INC.	
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978	
Test Site No.	Sporton Site No.	FCC/IC Registration No.
	03CH06-HY	722060/4086B-1

1.7. Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ FCC 47 CFR FCC Part 15 Subpart B
- ♦ ANSI C63.4-2003

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.

2. Test Configuration of Equipment Under Test

2.1. Test Mode

The EUT has been tested which pursuant ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

Frequency range investigated: radiation (30MHz to the 5th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

The following tables are showing the test modes as the worst cases and recorded in this report.

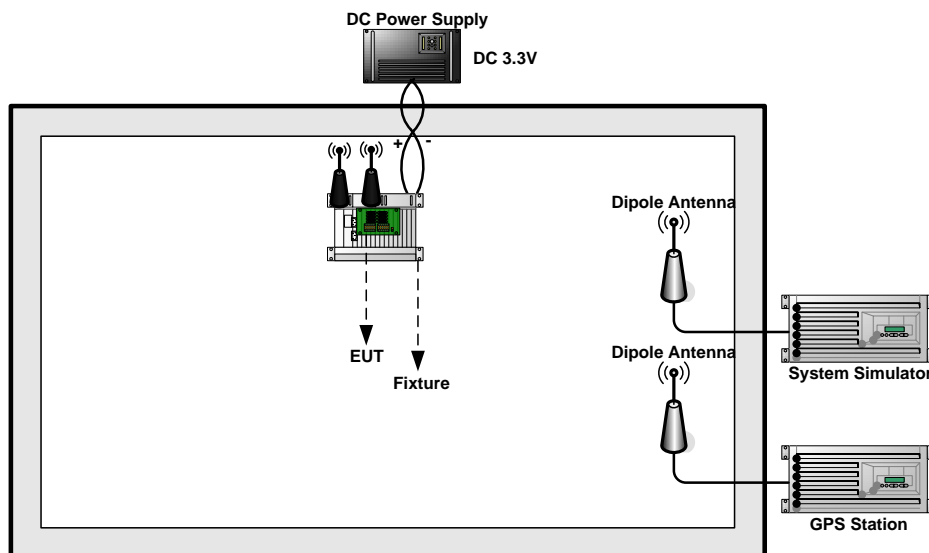
Item	EUT Configuration	Test Condition	
		EMI RE<1G	EMI RE≥1G
1.	Operating Mode (EUT with DC Power Supply)	☒	☒

Abbreviations:

- EMI RE ≥ 1G: EUT radiated emissions ≥ 1GHz
- EMI RE < 1G: EUT radiated emissions < 1GHz

Test Items	EUT Configure Mode	Function Type
Radiated Emissions < 1GHz	1	Mode 1 : GSM850 (GPRS class 8) Idle + GPS Rx + DC 3.3V Mode 2 : WCDMA Band II Idle + GPS Rx + DC 3.3V
Radiated Emissions ≥ 1GHz	1	Mode 1 : WCDMA Band II Idle + GPS Rx + DC 3.3V
Remark: The worst case of RE < 1G is mode 2; only the test data of this mode was reported.		

2.2. Connection Diagram of Test System



2.3. Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	DC Power Supply	GW	GPC-60300	N/A	N/A	Unshielded, 1.8 m
3.	GPS Station	Pendulum	GSG-56	N/A	N/A	Unshielded, 1.8 m

2.4. Test Software

The EUT was in GPRS or WCDMA idle mode during the testing. The EUT was synchronized to the BCCH, and was in continuous receiving mode by setting system simulator's paging reorganization.

Turn on GPS function to make the EUT receive continuous signals from GPS station.

3. Test Result

3.1. Test of Radiated Emission Measurement

3.1.1. Limit of Radiated Emission

The emissions from an unintentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

3.1.2. Measuring Instruments

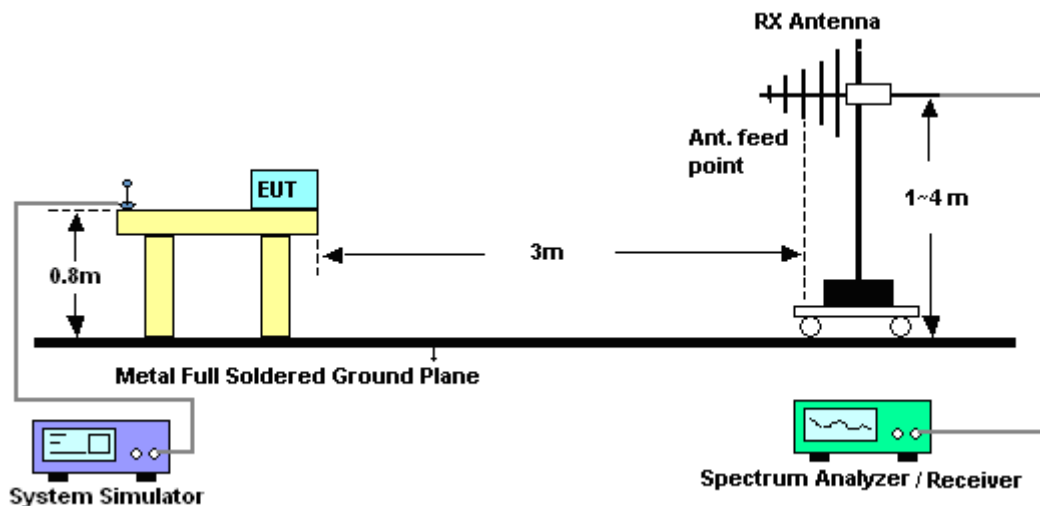
See list of measuring instruments of this test report.

3.1.3. Test Procedures

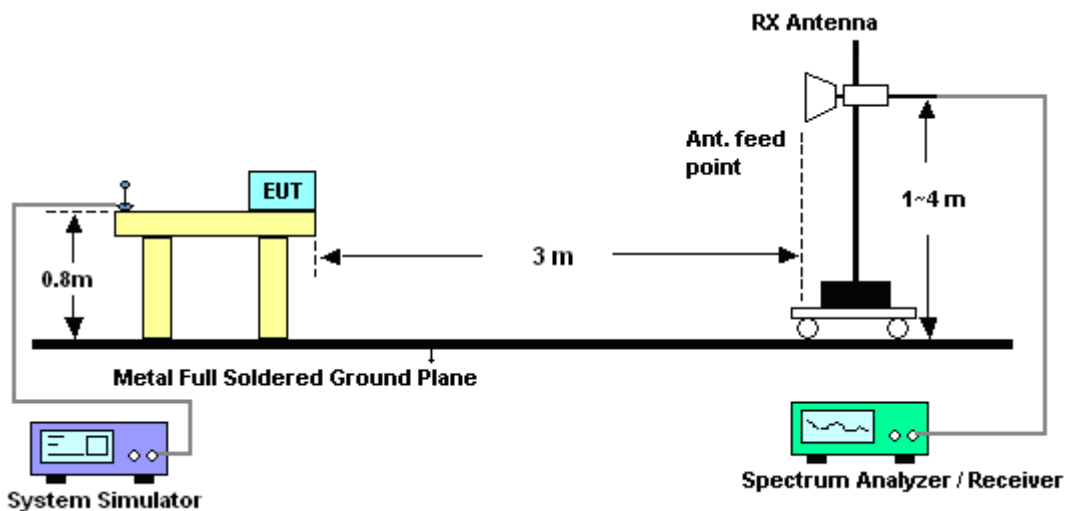
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna is a Bi-Log antenna and its height is adjusted between one to four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, peak values of EUT will be reported. Otherwise, the emission will be repeated by using the quasi-peak method and reported.
8. Emission level (dBuV/m) = 20 log Emission level (uV/m)
9. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

3.1.4. Test Setup of Radiated Emission

For radiated emissions from 30MHz to 1GHz

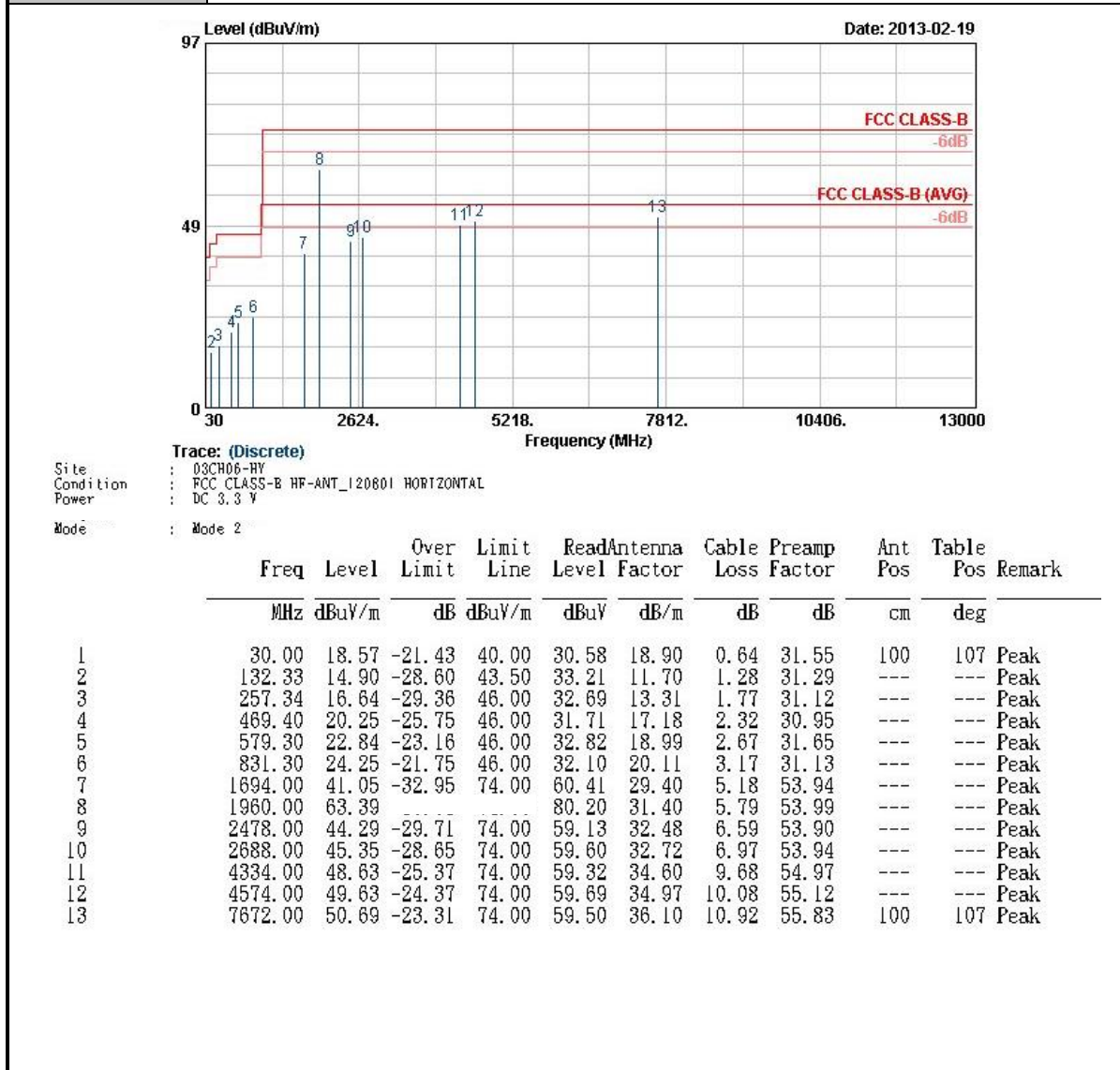


For radiated emissions above 1GHz



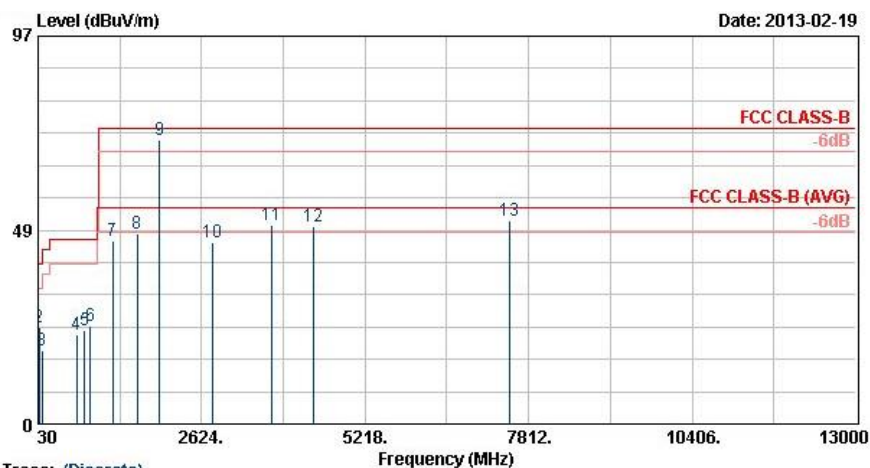
3.1.5. Test Result of Radiated Emission

Test Mode :	Mode 2	Temperature :	22~23°C
Test Engineer :	Hayden Wu	Relative Humidity :	43~44%
Test Distance :	3m	Polarization :	Horizontal
Function Type :	WCDMA Band II Idle + GPS Rx + DC 3.3V		
Remark :	#8 is system simulator signal which can be ignored.		





Test Mode :	Mode 2	Temperature :	22~23°C
Test Engineer :	Hayden Wu	Relative Humidity :	43~44%
Test Distance :	3m	Polarization :	Vertical
Function Type :	WCDMA Band II Idle + GPS Rx + DC 3.3V		
Remark :	#9 is system simulator signal which can be ignored.		



	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	30.00	25.66	-14.34	40.00	37.67	18.90	0.64	31.55	100	117	Peak
2	44.58	24.19	-15.81	40.00	44.23	10.70	0.76	31.50	---	---	Peak
3	97.23	18.56	-24.94	43.50	38.68	10.28	1.09	31.49	---	---	Peak
4	645.80	22.46	-23.54	46.00	31.55	19.20	2.80	31.09	---	---	Peak
5	763.40	23.39	-22.61	46.00	31.72	19.73	3.05	31.11	---	---	Peak
6	855.80	24.48	-21.52	46.00	31.66	20.31	3.25	30.73	---	---	Peak
7	1214.00	45.94	-28.06	74.00	67.97	27.80	4.19	54.01	---	---	Peak
8	1598.00	47.77	-26.23	74.00	68.14	28.60	4.95	53.92	---	---	Peak
9 @	1960.00	71.19			87.99	31.40	5.79	53.99	---	---	Peak
10	2804.00	45.27	-28.73	74.00	59.16	32.86	7.21	53.96	---	---	Peak
11	3738.00	49.87	-24.13	74.00	62.46	33.44	8.46	54.49	---	---	Peak
12	4388.00	49.48	-24.52	74.00	59.94	34.72	9.79	54.98	---	---	Peak
13	7504.00	50.68	-23.32	74.00	59.59	36.10	10.88	55.89	100	208	Peak

4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP30	101352	9KHz~30GHz	Nov. 07, 2012	Feb. 19, 2013	Nov. 06, 2013	Radiation (03CH06-HY)
Spectrum Analyzer	Agilent	E4408B	MY44211030	9KHz ~ 26.5GHz	Nov. 26, 2012	Feb. 19, 2013	Nov. 25, 2013	Radiation (03CH06-HY)
EMI Test Receiver	R&S	ESVS10	834468/0003	20MHz ~ 1000MHz	May 04, 2012	Feb. 19, 2013	May 03, 2013	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz ~ 2GHz	Oct. 06, 2012	Feb. 19, 2013	Oct. 05, 2013	Radiation (03CH06-HY)
Double Ridge Horn Antenna	EMCO	3117	00066583	1GHz ~ 18GHz	Aug. 01, 2012	Feb. 19, 2013	Jul. 31, 2013	Radiation (03CH06-HY)
Amplifier	Agilent	310N	186713	9KHz ~ 1GHz	Apr. 11, 2012	Feb. 19, 2013	Apr. 10, 2013	Radiation (03CH06-HY)
Pre Amplifier	EMCI	EMC051845	SN980048	1GHz ~ 18GHz	Jul. 21, 2012	Feb. 19, 2013	Jul. 20, 2013	Radiation (03CH06-HY)
Turn Table	INN-CO	DS2000	420/650/00	0 - 360 degree	N/A	Feb. 19, 2013	N/A	Radiation (03CH06-HY)
Antenna Mast	MF	MF-7802	MF780208212	1 m ~ 4 m	N/A	Feb. 19, 2013	N/A	Radiation (03CH06-HY)

5. Uncertainty of Evaluation

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.54
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.72
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Appendix A. Photographs of EUT

Please refer to Sporton report number EP312451 as below.