



**CONFORMANCE TEST REPORT
 FOR
 FCC 47 CFR, Part 22 Subpart H / Part 24 Subpart E**

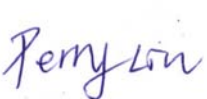
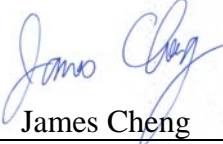

Report No.: 11-06-MAS-176-06

Client: **Ericsson AB**
 Product: **Cisco Cius 4G**
 Model: **CIUS-7-AT-K9**
 FCC ID: **VV7-MBMF5521GW1-O**

Manufacturer/supplier: **Celestica Thailand Ltd.**
 Date test item received: 2011/06/13
 Date test campaign completed: 2011/08/30
 Date of issue: 2011/08/30

The test result only corresponds to the tested sample. It is not permitted to copy this report, in part or in full, without the permission of the test laboratory.

Total number of pages of this test report: 13 pages

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TEST REPORT CERTIFICATION

Client : Ericsson AB.

Address : Lindholmospiren 11, 417 56 Göteborg, Sweden

Manufacturer : Celestica Thailand Ltd.

Address : 49/18 Moo 5, Laem Chabang Industrial Estate, Tungsukhla
Chonburi, Thailand 20230

EUT : Cisco Cius 4G

Trade name : Cisco Systems Inc.

Model No. : CIUS-7-AT-K9

Power Source : Adapter 1: (APD / DA-20A05)
Input: 100-240Vac, 50-60Hz, 1.0A Max
Output: 5V, 4A Max
Adapter 2: (ENG / 3A-204DB05)
Input: 100-240Vac, 50-60Hz, 0.5A
Output: 5V, 4.0A

Regulations applied : FCC 47 CFR, Part 22 Subpart H and Part 24 Subpart E

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- ③ Filing: FCC, Industry Canada, VCCI
- ④ MRA: Australia, Hong Kong, New Zealand, Singapore, USA, Japan, Korea, China, APLAC through TAF
- ⑤ FCC Registration Number: 90588, 91094, 91095
- ⑥ Industry Canada Site Registration number: IC 2949A



NVLAP Lab Code 200133-0

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1. GENERAL INFORMATION

1.1 Product Description

- a) Type of EUT : Cisco Cius 4G
- b) Trade Name : Cisco Systems, Inc.
- c) Model No. : CIUS-7-AT-K9
- d) FCC ID : VV7-MBMF5521GW1-O

1.2 Characteristics of Device

The EUT is mobile collaboration tablet with WWAN as one of the wireless technology. It operates in the GSM band at 850MHz and PCS band at 1900MHz.

1.3 Test Methodology

Both conducted and radiated testing were performed according to the procedures document on chapter 13 of ANSI C63.4 and FCC CFR 47, 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055 and 2.1057.

1.4 Modification List of EUT

N/A

1.5 Test Facility

The semi-anechoic chamber and conducted measurement facility used to collect the radiated and conducted data are located inside the Building at No.8, Lane 29, Wen-ming Road, Lo-shan Tsun, Kweishan Hsiang, Taoyuan, Taiwan, R.O.C.

This site has been accreditation as a FCC filing site.

1.6 Test Summary

FCC Part Section (s)	Test Description	Test Limit	Test Condition	Test Result	Note
TRANSMITTER MODE (TX)					
22.913(a)(2)	Effective Radiated Power	<7 Watts max. ERP	RADIATED	PASS	
24.232(c)	Equivalent Isotropic Radiated Power	<2 Watts max. EIRP		PASS	
2.1053, 22.917(a), 24.238(a)	Undesirable Emissions	<43+log ₁₀ (P[Watts]) for all out-band emissions		PASS	

2. SYSTEM TEST CONFIGURATION

2.1 Justification

For the purposes of this test report ancillary equipment is defined as equipment which is used in conjunction with the EUT to provide operational and control features to the EUT during the test. The simulate equipment was used to control the RF channel under the highest, middle and lowest frequency and transmit the maximum RF power.

2.2 Devices for Tested System

Device	Manufacture	Model	Cable Description
* Cisco Cius 4G	Celestica Thailand Ltd.	CIUS-7-AT-K9	----

Remark “*” means equipment under test.

2.2.1 Test Channel – Frequency comparison table for test:

GSM 850		PCS 1900	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
128	824.2	512	1850.2
190	836.6	661	1880.0
251	848.8	810	1909.8

2.2.2 Power Control Level (CMU200)

GSM 850	5 (33 dBm)
PCS 1900	0 (30 dBm)

3. ERP & EIRP MEASUREMENT

3.1 Standard Applicable

According to FCC §2.1046 and FCC §22.913(b): The Effective Radiated Power (ERP) of mobile transmitters must not exceed 7 Watts. FCC §24.232(b): The equivalent Isotropic Radiated Power (EIRP) must not exceed 2 Watts.

3.2 Measurement Procedure

The setup of the EUT as shown in figure 1 and figure 2. The EUT was placed on a non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.

During the measurement of the EUT, the resolution bandwidth was set to 3MHz and the average bandwidth was set to 3MHz. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna. The reading was recorded and the field strength (E in dBuV/m) was calculated.

ERP in frequency band 824-849MHz, and EIRP in frequency band 1851.25 –1910MHz were measured using a substitution method. The EUT was replaced by half-wave dipole (824-849MHz) or horn antenna (1851.25-1910MHz) connected to a signal generator. The spectrum analyzer reading was recorded and ERP/EIRP was calculated as follows:

$$\text{ERP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBd)} - \text{Cable (dB)}$$

$$\text{EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable (dB)}$$

3.3 Measurement Equipment

Equipment	Manufacturer	Model No.	Next Cal. Due
EMI Test Receiver	R&S	ESIB7	07/25/2012
Spectrum Analyzer	Rohde & Schwarz	FSU46	11/25/2011
Horn Antenna	EMCO	3115	07/21/2012
Horn Antenna	EMCO	3115	12/12/2011
LogBicone Antenna	Schwarzbeck	CBL-6112B	09/02/2011
Horn Antenna	EMCO	3116	07/21/2012
Horn Antenna	EMCO	3116	01/01/2012
Preamplifier	Hewlett-Packard	8449B	10/25/2011
SYNESIZED SWEEPER	AGILENT	83640B	10/04/2011
DIPOLE ANTENNA	SCHWRZBECK	914;915	09/02/2011
DIPOLE ANTENNA	SCHWRZBECK	897;898	09/02/2011

Figure 1 : Frequencies measured below 1 GHz and above 1GHz configuration

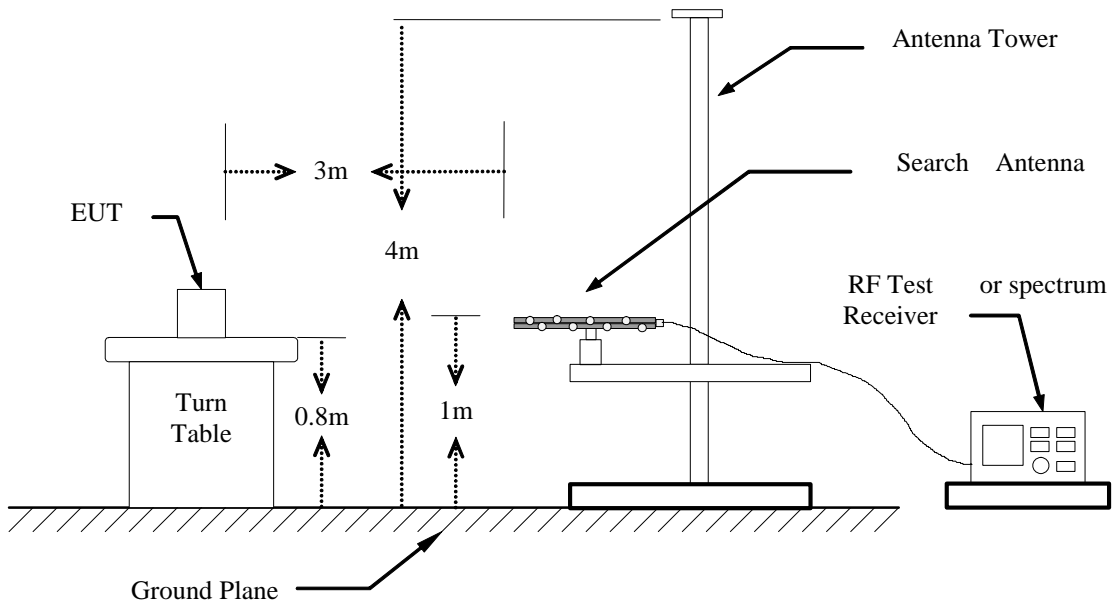
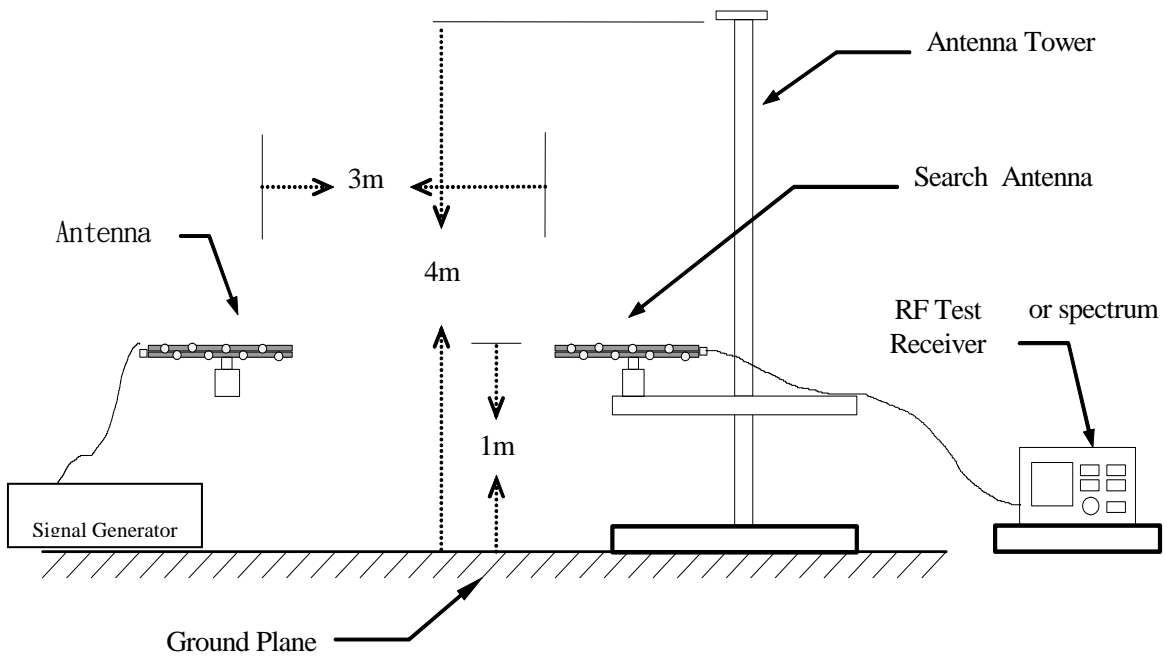


Figure 2 : Frequencies measured with substitution method



3.4 Test Result

Test Date : 07/13/2011Temperature : 23°CHumidity : 56%

GSM 850 Band (ERP)

Test Mode	Channel	Frequency (MHz)	Polarity H/V	Rx S.A. Reading @3m (dBuV)	Tx S.G. Reading (dBm)	Tx Cable loss (dB)	Tx Antenna Gain (dBi)	Result (dBm)	Limit (dBm)	Margin (dB)
GSM850	128	824.200	H	128.06	36.20	3.68	2.15	32.52	38.50	-5.98
	128	824.200	V	129.38	37.16	3.68	2.15	33.48	38.50	-5.02
	190	836.600	H	131.27	38.83	3.71	2.15	35.12	38.50	-3.38
	190	836.600	V	129.90	37.96	3.71	2.15	34.25	38.50	-4.25
	251	848.800	H	128.77	36.44	3.74	2.15	32.70	38.50	-5.80
	251	848.800	V	130.65	38.57	3.74	2.15	34.83	38.50	-3.67

PCS 1900 Band (EIRP)

Test Mode	Channel	Frequency (MHz)	Polarity H/V	Rx S.A. Reading @3m (dBuV)	Tx S.G. Reading (dBm)	Tx Cable loss (dB)	Tx Antenna Gain (dBi)	Result (dBm)	Limit (dBm)	Margin (dB)
PCS1900	512	1850.200	H	124.20	18.74	1.14	8.51	26.11	33.00	-6.89
	512	1850.200	V	126.44	21.08	1.14	8.51	28.45	33.00	-4.55
	661	1880.000	H	123.37	17.87	1.15	8.53	25.25	33.00	-7.75
	661	1880.000	V	122.93	17.70	1.15	8.53	25.08	33.00	-7.92
	810	1909.800	H	122.04	16.61	1.16	8.55	24.00	33.00	-9.00
	810	1909.800	V	121.91	16.39	1.16	8.55	23.78	33.00	-9.22

ERP (Freq. <1GHz)=Tx S.G. Reading - Tx Cable loss + Tx Antenna Gain - 2.15

EIRP (Freq. >=1GHz)=Tx S.G. Reading - Tx Cable loss + Tx Antenna Gain

WCDMA V Band (ERP)

Test Mode	Channel	Frequency (MHz)	Polarity H/V	Rx S.A. Reading @3m (dBuV)	Tx S.G. Reading (dBm)	Tx Cable loss (dB)	Tx Antenna Gain (dBi)	Result (dBm)	Limit (dBm)	Margin (dB)
WCDMA Band V	4132	862.400	H	127.97	36.29	3.77	2.15	32.52	38.50	-5.98
	4132	862.400	V	128.89	37.25	3.77	2.15	33.48	38.50	-5.02
	4183	836.400	H	130.40	38.83	3.71	2.15	35.12	38.50	-3.38
	4183	836.400	V	130.18	37.96	3.71	2.15	34.25	38.50	-4.25
	4233	846.600	H	128.28	36.43	3.73	2.15	32.70	38.50	-5.80
	4233	846.600	V	131.02	38.56	3.73	2.15	34.83	38.50	-3.67

WCDMA II Band (EIRP)

Test Mode	Channel	Frequency (MHz)	Polarity H/V	Rx S.A. Reading @3m (dBuV)	Tx S.G. Reading (dBm)	Tx Cable loss (dB)	Tx Antenna Gain (dBi)	Result (dBm)	Limit (dBm)	Margin (dB)
WCDMA Band II	9262	1852.400	H	117.05	12.29	1.14	8.51	19.66	33.00	-13.34
	9262	1852.400	V	119.07	14.11	1.14	8.51	21.48	33.00	-11.52
	9400	1880.000	H	116.77	11.65	1.15	8.53	19.03	33.00	-13.97
	9400	1880.000	V	116.67	11.18	1.15	8.53	18.56	33.00	-14.44
	9538	1907.600	H	106.50	1.70	1.16	8.54	9.08	33.00	-23.92
	9538	1907.600	V	117.17	12.40	1.16	8.54	19.78	33.00	-13.22

ERP (Freq. <1GHz)=Tx S.G. Reading - Tx Cable loss + Tx Antenna Gain - 2.15

EIRP (Freq. >=1GHz)=Tx S.G. Reading - Tx Cable loss + Tx Antenna Gain

4. FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT

4.1 Standard Applicable

According to FCC §2.1053

4.2 Measurement Procedure

The setup of the EUT as shown in figure 1 and figure 2. The EUT was placed on a non-conductive, the measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

The frequency range up to tenth harmonic was investigated for each of three fundamental frequency (low, middle and high channels). Once spurious emission were identified, the power of the emission was determined using the substitution method.

The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.

$$\text{ERP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBd)} - \text{Cable (dB)}$$

$$\text{EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable (dB)}$$

4.3 Measurement Equipment

Equipment	Manufacturer	Model No.	Next Cal. Due
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Spectrum Analyzer	Rohde & Schwarz	FSU46	11/25/2011
Horn Antenna	EMCO	3115	07/21/2012
LogBicone Antenna	Schwarzbeck	CBL-6112B	09/02/2011
Horn Antenna	EMCO	3116	0721/2012
Preamplifier	Hewlett-Packard	8449B	10/25/2011
SYNESIZED SWEEPER	AGILENT	83640B	10/04/2011
DIPOLE ANTENNA	SCHWRZBECK	914;915	09/02/2011
DIPOLE ANTENNA	SCHWRZBECK	897;898	09/02/2011

4.4 Test ResultTest Date : 07/13/2011Temperature : 23°CHumidity : 56%Operated mode : GSM850/CH128

Frequency	Polarity	Rx S.A. Reading @3m	Tx S.G. Reading	Tx Cable loss	Tx Antenna Gain	Result	Limit	Margin
(MHz)	H/V	(dBuV)	(dBm)	(dB)	(dBi)	(dBm)	(dBm)	(dB)
1649.03	H	67.35	-37.40	1.06	8.39	-30.07	33.00	-63.07
1649.03	V	65.67	-39.62	1.06	8.39	-32.29	33.00	-65.29
2471.15	H	71.46	-34.42	1.29	9.35	-26.36	33.00	-59.36
2471.15	V	63.49	-42.57	1.29	9.35	-34.51	33.00	-67.51
4346.15	H	62.16	-44.13	1.70	9.72	-36.11	33.00	-69.11
4346.15	V	67.03	-38.73	1.70	9.72	-30.71	33.00	-63.71

Operated mode : GSM850/CH190

Frequency	Polarity	Rx S.A. Reading @3m	Tx S.G. Reading	Tx Cable loss	Tx Antenna Gain	Result	Limit	Margin
(MHz)	H/V	(dBuV)	(dBm)	(dB)	(dBi)	(dBm)	(dBm)	(dB)
1663.46	H	67.08	-38.57	1.07	8.40	-31.24	33.00	-64.24
1663.46	V	66.03	-39.15	1.07	8.40	-31.82	33.00	-64.82
2500.00	V	70.41	-35.10	1.30	9.40	-27.00	33.00	-60.00

Operated mode : GSM850/CH251

Frequency	Polarity	Rx S.A. Reading @3m	Tx S.G. Reading	Tx Cable loss	Tx Antenna Gain	Result	Limit	Margin
(MHz)	H/V	(dBuV)	(dBm)	(dB)	(dBi)	(dBm)	(dBm)	(dB)
1692.30	H	61.24	-43.55	1.08	8.42	-36.21	33.00	-69.21
1692.30	V	58.94	-46.35	1.08	8.42	-39.01	33.00	-72.01

Operated mode : WCDMA Band V /CH4132

Frequency	Polarity	Rx S.A. Reading @3m	Tx S.G. Reading	Tx Cable loss	Tx Antenna Gain	Result	Limit	Margin
(MHz)	H/V	(dBuV)	(dBm)	(dB)	(dBi)	(dBm)	(dBm)	(dB)
1649.03	H	61.38	-43.72	1.06	8.39	-36.39	33.00	-69.39
1649.03	V	58.31	-46.87	1.06	8.39	-39.54	33.00	-72.54
2471.15	H	63.05	-43.07	1.29	9.35	-35.01	33.00	-68.01

Operated mode : WCDMA Band V/CH4183

Frequency	Polarity	Rx S.A. Reading @3m	Tx S.G. Reading	Tx Cable loss	Tx Antenna Gain	Result	Limit	Margin
(MHz)	H/V	(dBuV)	(dBm)	(dB)	(dBi)	(dBm)	(dBm)	(dB)
1677.88	H	58.66	-46.20	1.07	8.41	-38.86	33.00	-71.86