FCC CFR47 PART 15 SUBPART C
INDUSTRY CANADA RSS-210 ISSUE 8

CERTIFICATION TEST REPORT

FOR

HANDHELD TERMINAL

MODEL NUMBER: IT-9000E-MC25E, IT-9000E-C25E*

FCC ID: BBQIT9000
IC: 2388F-IT9000

REPORT NUMBER: 12J14253-2, Revision A

ISSUE DATE: FEBRUARY 21, 2012

Prepared for
CASIO COMPUTER CO., LTD
6-2 HON-MACHI 1-CHOME
SHIBUYA-KU
TOKYO, 151-8543, JAPAN

Prepared by
COMPLIANCE CERTIFICATION SERVICES (UL CCS)
47173 BENICIA STREET
FREMONT, CA 94538, U.S.A.
TEL: (510) 771-1000
FAX: (510) 661-0888

*Models differences are explained in the body of this report

NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	02/16/12	Initial Issue	F. Ibrahim
A	02/21/12	Revised sections 5.2 and 8.	F. Ibrahim

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: CASIO COMPUTER CO., LTD
6-2 HON-MACHI 1-CHOME
SHIBUYA-KU
TOKYO, 151-8543, JAPAN

EUT DESCRIPTION: HANDHELD TERMINAL

MODEL: IT-9000E-MC25E

SERIAL NUMBER: JAM23, CEM73

DATE TESTED: FEBRUARY 8-13, 2012

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 15 SUBPART C	Pass
INDUSTRY CANADA RSS-210 Issue 8, Annex 2	Pass
INDUSTRY CANADA RSS-GEN Issue 3	Pass

Compliance Certification Services (UL CCS) tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL CCS based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL CCS will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released For UL CCS By:

FRANK IBRAHIM
EMC SUPERVISOR
UL CCS

Tested By:

TOM CHEN
EMC ENGINEER
UL CCS

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2009, FCC CFR 47 Part 2, FCC CFR 47 Part 15, RSS-GEN Issue 3, and RSS-210 Issue 8.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

UL CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at http://www.ccsemc.com.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)

36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 1000 MHz	4.94 dB

Uncertainty figures are valid to a confidence level of 95%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a Bluetooth and RFID equipped Handheld Terminal.

The Bluetooth module is manufactured by Murata Manufacturing Co., Ltd.
The RFID module is manufactured by NXP Semiconductors.

5.2. DESCRIPTION OF MODELS DIFFERENCES

IT-9000E-MC25E has Magnetic Card Reader and IT-9000E-C25E does not. The difference between these two models is only this Magnetic card reader, and Main PCB and all other functions are same.

*: Model tested

Type	RFID	BT	Magnetic card reader
*IT-9000E-MC25E	X	X	X
IT9000E-C25E	X	X	

5.3. MAXIMUM OUTPUT POWER

The transmitter has a maximum E field as follows:

38.63 (Raw analyzer reading) + 10.56 (Antenna Factor) = **49.19 dBuV/m** at 10m distance

Frequency (MHz)	Mode	Fundamental E field @ 10m distance (dBuv/m)
13.56	Normal TX mode	49.19

EIRP = E field at 3m distance – 95.2
E field at 3m distance = E field at 10m distance + 20 = 49.19 + 20 = 69.19 dBuV/m
EIRP = 69.19 -95.2 = **-26.01 dBm = 0.002506109 mW**

5.4. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a loop antenna.

5.5. SOFTWARE AND FIRMWARE

The test utility software used during testing was NFCTest052.exe.

5.6. WORST-CASE CONFIGURATION AND MODE

(a) EUT axes

The fundamental was measured in three different orientations X, Y and Z to find worst-case orientation, and it was found that X orientation is worst-case; therefore final testing for radiated emissions was performed with EUT in X orientation with Cradle.

(b) Communication standard

The EUT supports following 5 communication standards.

ISO14443 Type A
ISO14443 Type B
FeliCa 212
FeliCa 424
ISO15693

The fundamental level and spurious level were measured in 5 standards.
The ISO14443 Type A was selected as a worst case of standard.

5.7. MODIFICATIONS

No modifications were made during testing.

5.8. DESCRIPTION OF TEST SETUP

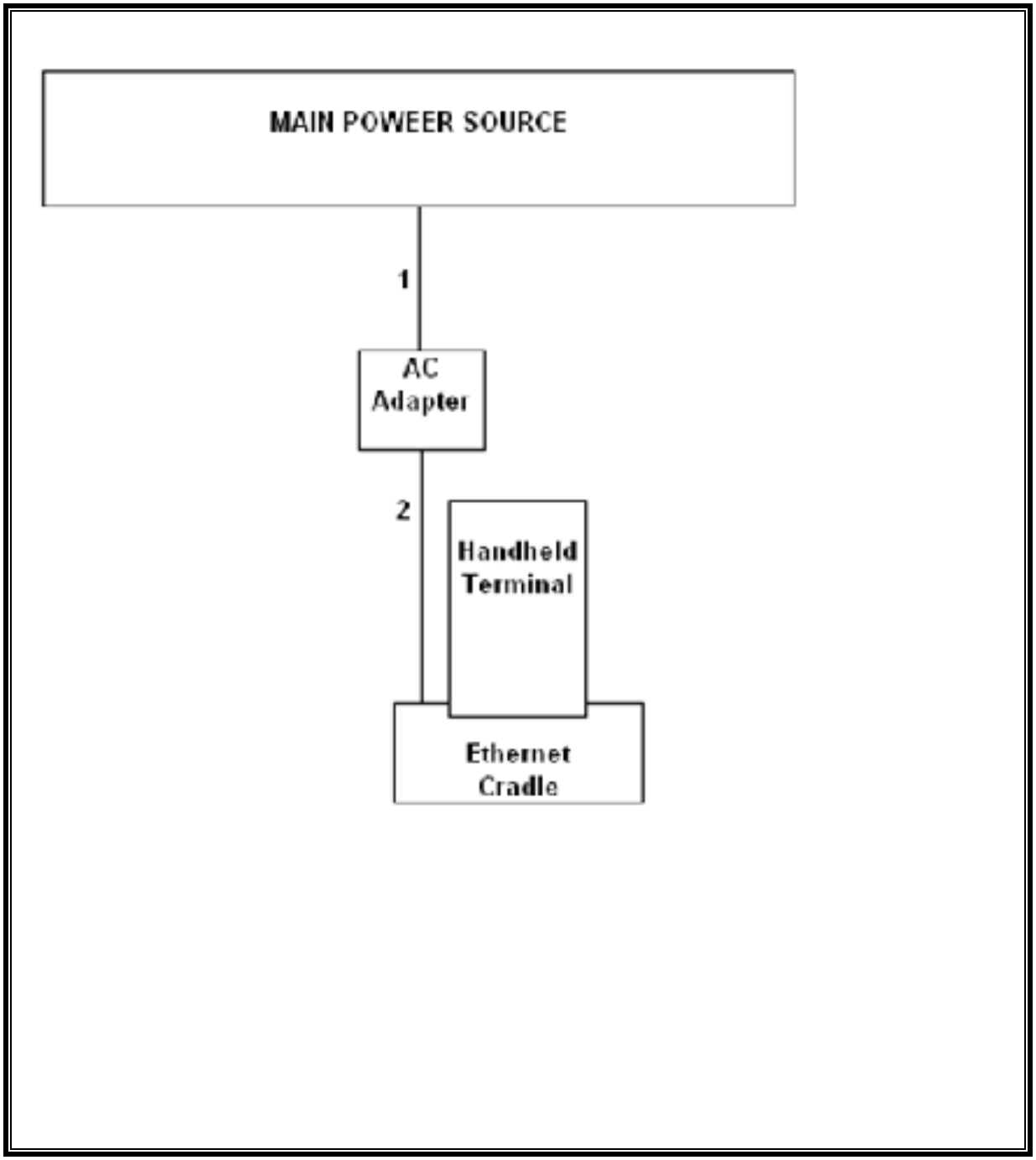
SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST			
Description	**Manufacturer**	**Model**	**Serial Number**
AC/DC Adapter	Casio	AD-S42120C	21
Cradle-type Battery Charger	Casio	HA-L30CHG	107
Battery Pack	Casio	HA-G20BAT	N/A

I/O CABLES

I/O CABLE LIST						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length**	**Remarks**
1	AC	1	US 115V	Un-shielded	2m	N/A
2	DC	1	DC	Un-shielded	1.5m	N/A

SETUP DIAGRAM FOR TESTS



6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST					
Description	**Manufacturer**	**Model**	**Asset**	**Cal Date**	**Cal Due**
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01176	08/04/11	08/04/12
Antenna, Horn, 18 GHz	EMCO	3115	C00872	06/29/11	06/29/12
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C00749	07/18/11	07/18/12
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01171	07/16/11	07/16/12
Preamplifier, 1300 MHz	Agilent / HP	8447D	C00558	11/11/11	11/11/12
Peak Power Meter	Agilent / HP	N1911A	1282124A	08/04/11	08/04/12
Peak and Avg Power Sensor	Agilent / HP	E9323A	1240537J	08/04/11	08/04/12
EMI Test Receiver, 9 kHz-7 GHz	R & S	ESCI 7	1000741	7/6/2011	7/6/2012
LISN, 30 MHz	FCC	LISN-50/250-25-2	N02625	11/10/11	11/10/12
Temperature / Humidity Chamber	Thermotron	SE 600-10-10	C00930	04/20/11	04/20/12

7. RADIATED EMISSION TEST RESULTS

7.1. LIMITS AND PROCEDURE

LIMIT

§15.225
IC RSS-210, Section 2.6 (Transmitter)
IC RSS-GEN, Section 6 (Receiver)

(a) The field strength of any emissions within the band 13.553–13.567 MHz shall not exceed 15,848 microvolts/ meter at 30 meters.

(b) Within the bands 13.410–13.553 MHz and 13.567–13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.

(c) Within the bands 13.110–13.410 MHz and 13.710–14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.

(d) The field strength of any emissions appearing outside of the 13.110– 14.010 MHz and shall not exceed the general radiated emission limits in § 15.209 as follows:
§15.209 (a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Limits for radiated disturbance of an intentional radiator		
Frequency range (MHz)	Limits (µV/m)	Measurement Distance (m)
0.009 – 0.490	2400 / F (kHz)	300
0.490 – 1.705	24000 / F (kHz)	30
1.705 – 30.0	30	30
30 – 88	100**	3
88 - 216	150**	3
216 – 960	200**	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g. §§ 15.231 and 15.241.
§15.209 (b) In the emission table above, the tighter limit applies at the band edges.

Formula for converting the filed strength from uV/m to dBuV/m is:
Limit (dBuV/m) = 20 log limit (uV/m)

In addition:

§15.209 (d) The emission limits shown the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emissions limits in these three bands are based on measurements employing an average detector.

§15.209 (d) The provisions in §§ 15.225, measuring emissions at distances other than the distances specified in the above table, determining the frequency range over which radiated emissions are to be measured, and limiting peak emissions apply to all devices operated under this part.

TEST PROCEDURE

ANSI C63.4

The EUT is an intentional radiator that incorporates a digital device, the highest fundamental frequency generated or used in the device is 624 MHz; therefore, the frequency range was investigated from 30 MHz to 5000 MHz.

RESULTS

7.1.1. FUNDAMENTAL AND SPURIOUS EMISSIONS (0.15 – 30 MHz)

FCC Part 15, Subpart B & C **10 Meter Distance Measurement At Open Field**

Company: CASIO
Project #: 12J14253
Model #: IT-9000E-MC25E, IT-9000E-C25E
Tester: Tom Chen
Date: 2/9/2012

Frequency (MHz)	PK (dBu/V)	QP (dBu/V)	AV (dBuV)	AF dB/m	Distance Correction (dB)	PK Corrected Reading (dBuV/m)	AV Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	PK Margin (dB)	AV Margin (dB)	Notes
Loop Antenna Face On:												
13.56	38.63		N/A	10.56	-19.08	30.10	N/A	84.00	N/A	-53.9	N/A	Fundamental @ 10m Dist
13.41	19.42		N/A	10.54	-19.08	10.88	N/A	50.48	N/A	-39.6	N/A	13.41-13.553MHz Spurious @ 10m
13.553	33.96		N/A	10.56	-19.08	25.43	N/A	50.48	N/A	-25.0	N/A	13.41-13.553MHz Spurious @ 10m
13.567	35.01		N/A	10.56	-19.08	26.48	N/A	50.48	N/A	-24.0	N/A	13.567-13.710MHz Spurious @ 10m
13.71	19.88		N/A	10.57	-19.08	11.37	N/A	50.48	N/A	-39.1	N/A	13.567-13.710MHz Spurious @ 10m
13.11	15.35		N/A	10.51	-19.08	6.78	N/A	40.51	N/A	-33.7	N/A	13.110-13.410MHz Spurious @ 10m
13.41	19.42		N/A	10.54	-19.08	10.88	N/A	40.51	N/A	-29.6	N/A	13.110-13.410MHz Spurious @ 10m
13.71	19.88		N/A	10.57	-19.08	11.37	N/A	40.51	N/A	-29.1	N/A	13.710-14.010MHz Spurious @ 10m
14.01	14.85		N/A	10.6	-19.08	6.37	N/A	40.51	N/A	-34.1	N/A	13.710-14.010MHz Spurious @ 10m
27.12	15.15		N/A	9.046	-19.08	5.11	N/A	29.54	N/A	-24.4	N/A	14.010-30MHz Spurious @ 10m
Loop Antenna Face Off:												
13.56	37.56		N/A	10.56	-19.08	29.03	N/A	84.00	N/A	-55.0	N/A	Fundamental @ 10m Dist
13.41	19.45		N/A	10.54	-19.08	10.91	N/A	50.48	N/A	-39.6	N/A	13.41-13.553MHz Sprious @ 10m
13.553	33.16		N/A	10.56	-19.08	24.63	N/A	50.48	N/A	-25.8	N/A	13.41-13.553MHz Sprious @ 10m
13.567	33.71		N/A	10.56	-19.08	25.18	N/A	50.48	N/A	-25.3	N/A	13.567-13.710MHz Spurious @ 10m
13.71	20.75		N/A	10.57	-19.08	12.24	N/A	50.48	N/A	-38.2	N/A	13.567-13.710MHz Spurious @ 10m
13.11	14.86		N/A	10.51	-19.08	6.29	N/A	40.51	N/A	-34.2	N/A	13.110-13.410MHz Spurious @ 10m
13.41	19.45		N/A	10.54	-19.08	10.91	N/A	40.51	N/A	-29.6	N/A	13.110-13.410MHz Spurious @ 10m
13.71	20.75		N/A	10.57	-19.08	12.24	N/A	40.51	N/A	-28.3	N/A	13.710-14.010MHz Spurious @ 10m
14.01	15.05		N/A	10.6	-19.08	6.57	N/A	40.51	N/A	-33.9	N/A	13.710-14.010MHz Spurious @ 10m
27.12	14.71		N/A	9.046	-19.08	4.67	N/A	29.54	N/A	-24.9	N/A	14.010-30MHz Spurious @ 10m

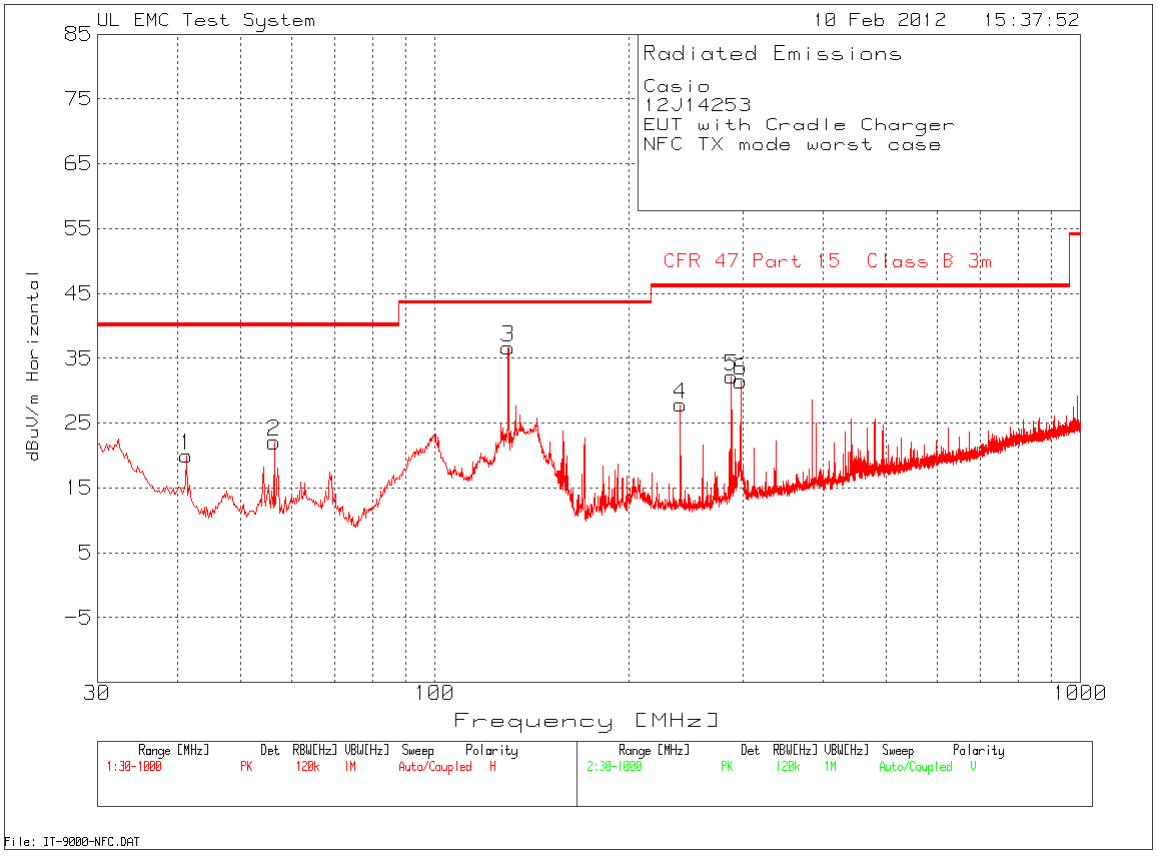
* No more emissions were found up to 30MHz

Note: The emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 10000Mhz. Radiated emission limits in these three bands are based on measurements employing an average detector.

P.K. = Peak
Q.P. = Quasi Peak Readings
A.F. = Antenna factor

7.1.2. TX SPURIOUS EMISSION 30 TO 1000 MHz

HORIZONTAL PLOT



VERTICAL PLOT

HORIZONTAL AND VERTICAL DATA

Casio
12J14253
EUT with Cradle Charger
NFC TX mode worst case

Range 1 30 - 1000MHz

Test Frequency	Meter Reading	Detector	25MHz-1Ghz ChmbrB Amp [dB]	T130 Bilog Factors.TXT [dB]	dBuV/m	CFR 47 Part 15 Class B 3m	Margin	Polarity
41.243	35.86	PK	-29.2	13.3	19.96	40	-20.04	Horz
56.3629	43.2	PK	-29	7.9	22.1	40	-17.9	Horz
129.8301	51.34	PK	-28.3	13.6	36.64	43.5	-6.86	Horz
240.031	43.35	PK	-27.3	11.8	27.85	46	-18.15	Horz
288.0076	46.18	PK	-26.9	12.9	32.18	46	-13.82	Horz
297.506	45.22	PK	-26.9	13.2	31.52	46	-14.48	Horz

Range 2 30 - 1000MHz

Test Frequency	Meter Reading	Detector	25MHz-1Ghz ChmbrB Amp [dB]	T130 Bilog Factors.TXT [dB]	dBuV/m	CFR 47 Part 15 Class B 3m	Margin	Polarity
33.1015	38.78	PK	-29.2	18.9	28.48	40	-11.52	Vert
55.5875	52.05	PK	-29	7.9	30.95	40	-9.05	Vert
58.3014	47.95	PK	-29	7.9	26.85	40	-13.15	Vert
130.024	39.84	PK	-28.2	13.6	25.24	43.5	-18.26	Vert
288.0076	36.02	PK	-26.9	12.9	22.02	46	-23.98	Vert
297.506	35.65	PK	-26.9	13.2	21.95	46	-24.05	Vert

7.1.3. TX SPURIOUS EMISSIONS ABOVE 1 GHz

High Frequency Measurement
Compliance Certification Services, Fremont 3m Chamber

Company: Casio
Project #: 12J14253
Date: 2/11/2012
Test Engineer: Tom Chen
Configuration: EUT with charger Cradle and Adapter
Mode: NFC, TX mode

Test Equipment:

Horn 1-18GHz	Pre-amplifer 1-26GHz	Pre-amplifer 26-40GHz	Horn > 18GHz	Limit
T60; S/N: 2238 @3m	T34 HP 8449B			FCC 15.209

Hi Frequency Cables

3' cable 22807700	12' cable 22807600	20' cable 22807500	HPF	Reject Filter
3' cable 22807700	12' cable 22807600	20' cable 22807500		

Peak Measurements
RBW=VBW=1MHz
Average Measurements
RBW=1MHz ; VBW=10Hz

f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)
1.128	3.0	47.5	30.2	25.3	2.9	-37.6	0.0	0.0	38.1	20.8	74	54	-35.9	-33.2	V
3.328	3.0	46.0	28.7	31.0	5.5	-35.0	0.0	0.0	47.5	30.2	74	54	-26.5	-23.8	V
6.793	3.0	43.7	26.4	35.6	8.9	-33.5	0.0	0.0	54.7	37.4	74	54	-19.3	-16.6	V
1.147	3.0	45.8	28.5	25.4	3.0	-37.6	0.0	0.0	36.6	19.3	74	54	-37.4	-34.7	H
2.448	3.0	46.4	29.1	28.7	4.6	-35.7	0.0	0.0	44.0	26.7	74	54	-30.0	-27.3	H
6.995	3.0	44.5	27.2	35.9	9.1	-33.3	0.0	0.0	56.2	38.9	74	54	-17.8	-15.1	H

Rev. 07.08.11

f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength	Pk Mar	Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

7.1.4. RX SPURIOUS EMISSIONS ABOVE 1 GHz

High Frequency Measurement
Compliance Certification Services, Fremont 3m Chamber

Company: Casio
Project #: 12J14253
Date: 2/11/2012
Test Engineer: Tom Chen
Configuration: EUT with charger Cradle and Adapter
Mode: NFC, RX mode

Test Equipment:

Horn 1-18GHz	Pre-amplifer 1-26GHz	Pre-amplifer 26-40GHz	Horn > 18GHz	Limit
T60; S/N: 2238 @3m	T34 HP 8449B			RX RSS 210

Hi Frequency Cables

3' cable 22807700	12' cable 22807600	20' cable 22807500	HPF	Reject Filter
3' cable 22807700	12' cable 22807600	20' cable 22807500		

Peak Measurements
RBW=VBW=1MHz
Average Measurements
RBW=1MHz ; VBW=10Hz

f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)
1.128	3.0	47.8	30.5	25.3	2.9	-37.6	0.0	0.0	38.4	21.1	74	54	-35.6	-32.9	V
3.328	3.0	46.3	29.0	31.0	5.5	-35.0	0.0	0.0	47.8	30.5	74	54	-26.2	-23.5	V
6.793	3.0	44.0	26.7	35.6	8.9	-33.5	0.0	0.0	55.1	37.8	74	54	-18.9	-16.2	V
1.147	3.0	46.2	28.9	25.4	3.0	-37.6	0.0	0.0	36.9	19.6	74	54	-37.1	-34.4	H
2.448	3.0	46.7	29.4	28.7	4.6	-35.7	0.0	0.0	44.3	27.0	74	54	-29.7	-27.0	H
6.995	3.0	44.9	27.6	35.9	9.1	-33.3	0.0	0.0	56.5	39.2	74	54	-17.5	-14.8	H

Rev. 07.08.11

f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength	Pk Mar	Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

8. AC MAINS LINE CONDUCTED EMISSIONS

LIMITS

§15.207
IC RSS-GEN, Section 7.2.2

(a) Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50µH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the band edges.

Frequency range (MHz)	Limits (dBµV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50
Notes: 1. The lower limit shall apply at the transition frequencies 2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.		

TEST PROCEDURE

ANSI C63.4

RESULTS

6 WORST EMISSIONS

8.1. EUT WITH ANTENNA

Casio
12J14253
EUT with Cradle Charger and Adapter
NFC TX mode worst case

Line-L1 .15 - 30MHz

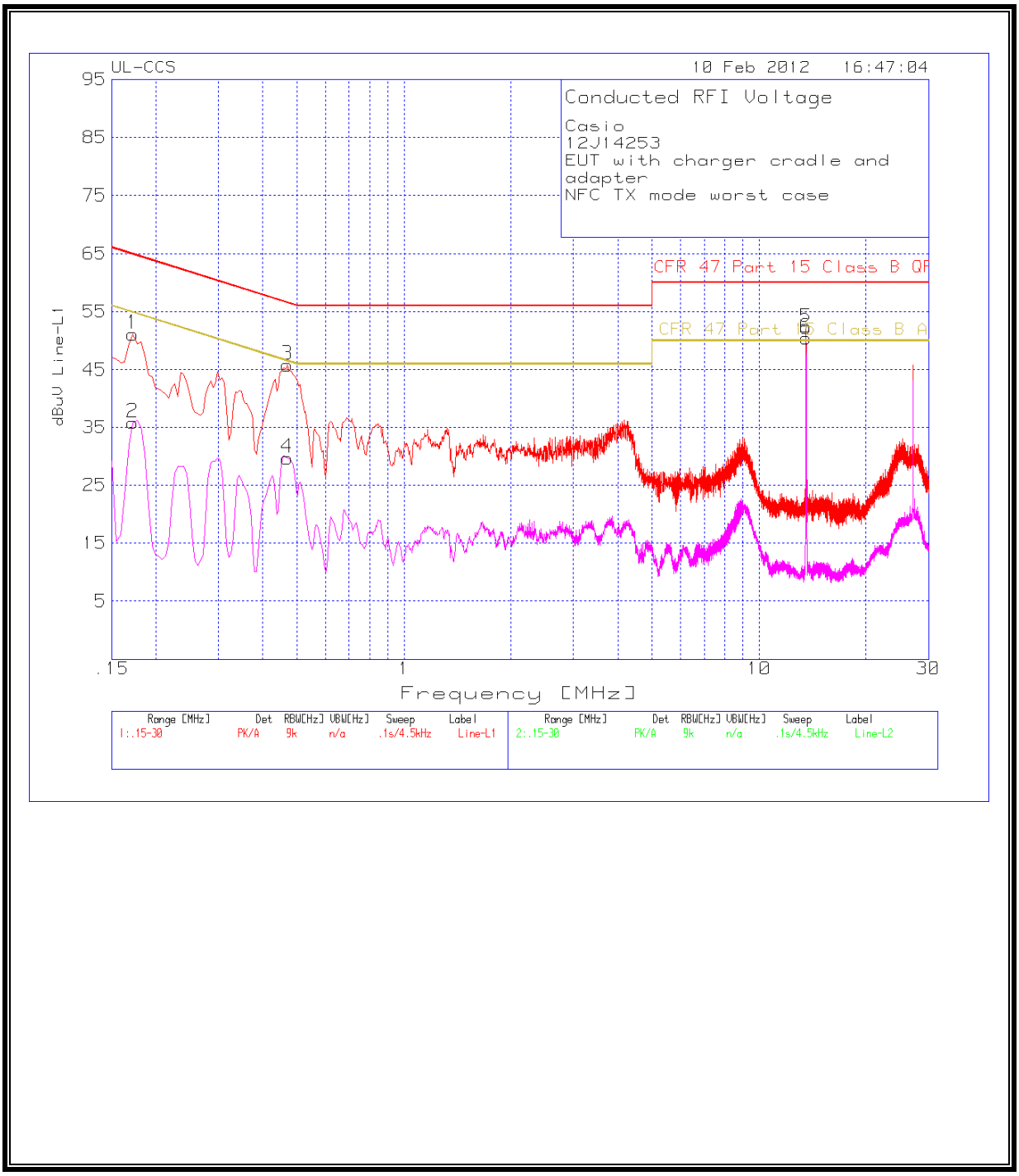
Test Frequency	Meter Reading	Detector	T24 IL L1.TXT [dB]	LC Cables 1&3.TXT [dB]	dBuV	CFR 47 Part 15 Class B QP	Margin	CFR 47 Part 15 Class B Avg	Margin
0.1725	50.97	PK	0.1	0	51.07	64.8	-13.73	54.8	-3.73
0.1725	35.8	Av	0.1	0	35.9	64.8	-28.9	54.8	-18.9
0.4695	45.72	PK	0.1	0	45.82	56.5	-10.68	46.5	-0.68
0.4695	29.49	Av	0.1	0	29.59	56.5	-26.91	46.5	-16.91
13.56	51.82	PK	0.2	0.2	52.22	60	-7.78	50	2.22
13.56	50.07	Av	0.2	0.2	50.47	60	-9.53	50	0.47

Line-L2 .15 - 30MHz

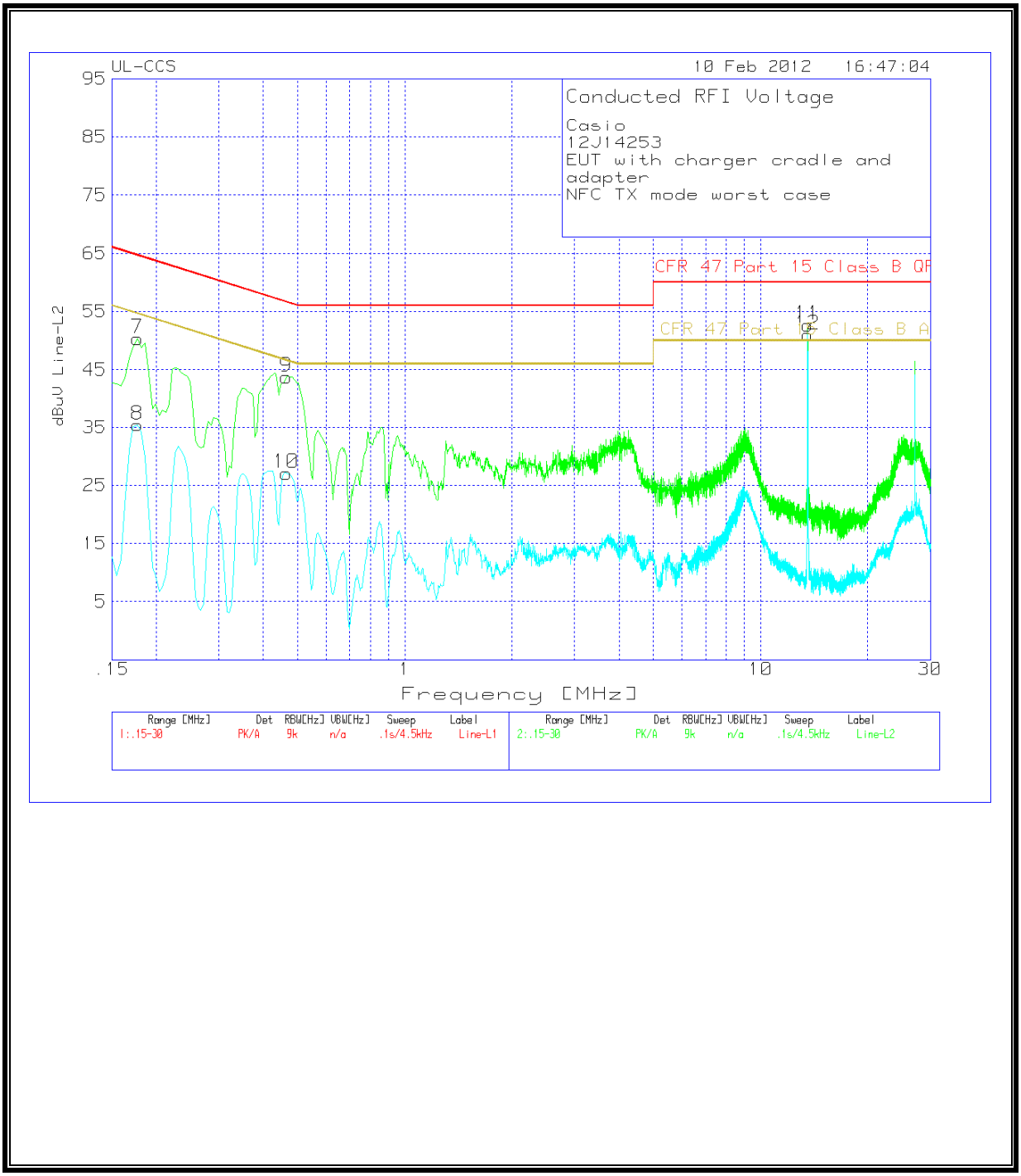
Test Frequency	Meter Reading	Detector	T24 IL L2.TXT [dB]	LC Cables 2&3.TXT [dB]	dBuV	CFR 47 Part 15 Class B QP	Margin	CFR 47 Part 15 Class B Avg	Margin
0.177	50.2	PK	0.1	0	50.3	64.6	-14.3	54.6	-4.3
0.177	35.35	Av	0.1	0	35.45	64.6	-29.15	54.6	-19.15
0.465	43.62	PK	0.1	0	43.72	56.6	-12.88	46.6	-2.88
0.465	26.99	Av	0.1	0	27.09	56.6	-29.51	46.6	-19.51
13.56	52.24	PK	0.2	0.2	52.64	60	-7.36	50	2.64
13.56	50.63	Av	0.2	0.2	51.03	60	-8.97	50	1.03

Note: 13.56 MHz is the fundamental signal and it is excluded from this data.

LINE 1 RESULTS



LINE 2 RESULTS



8.2. ANTENNA PORT TERMINALED WITH 50 OHM

Casio
12J14253
EUT with charger cradle and adapter
NFC Antenna port with 50ohm

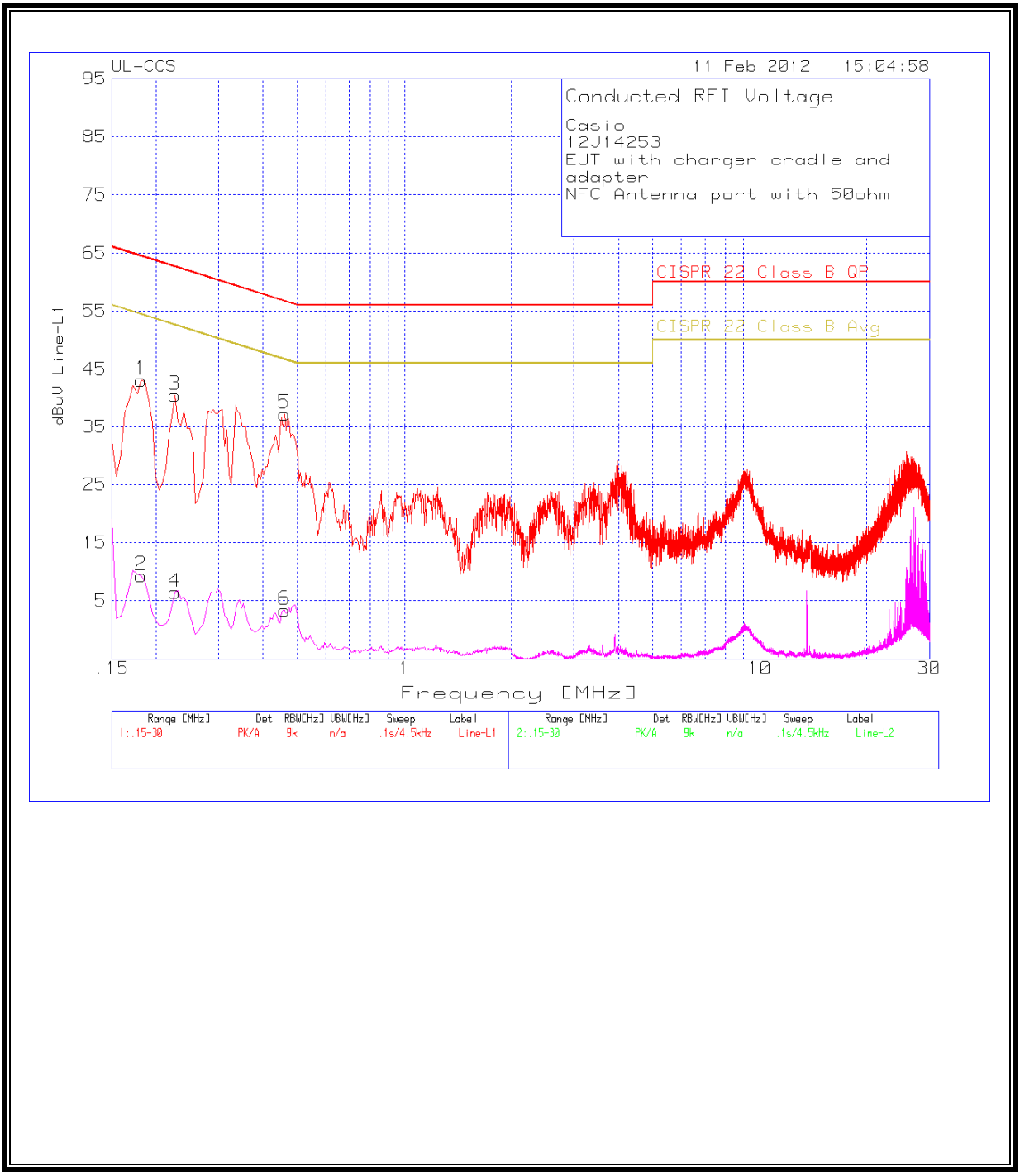
Line-L1 .15 - 30MHz

Test Frequency	Meter Reading	Detector	T24 IL L1.TXT [dB]	LC Cables 1&3.TXT [dB]	dBuV	CISPR 22 Class B QP	Margin	CISPR 22 Class B Avg	Margin
0.1815	42.97	PK	0.1	0	43.07	64.4	-21.33	-	-
0.1815	9.19	Av	0.1	0	9.29	-	-	54.4	-45.11
0.2265	40.38	PK	0.1	0	40.48	62.6	-22.12	-	-
0.2265	6.31	Av	0.1	0	6.41	-	-	52.6	-46.19
0.4605	37.14	PK	0.1	0	37.24	56.7	-19.46	-	-
0.4605	3.24	Av	0.1	0	3.34	-	-	46.7	-43.36

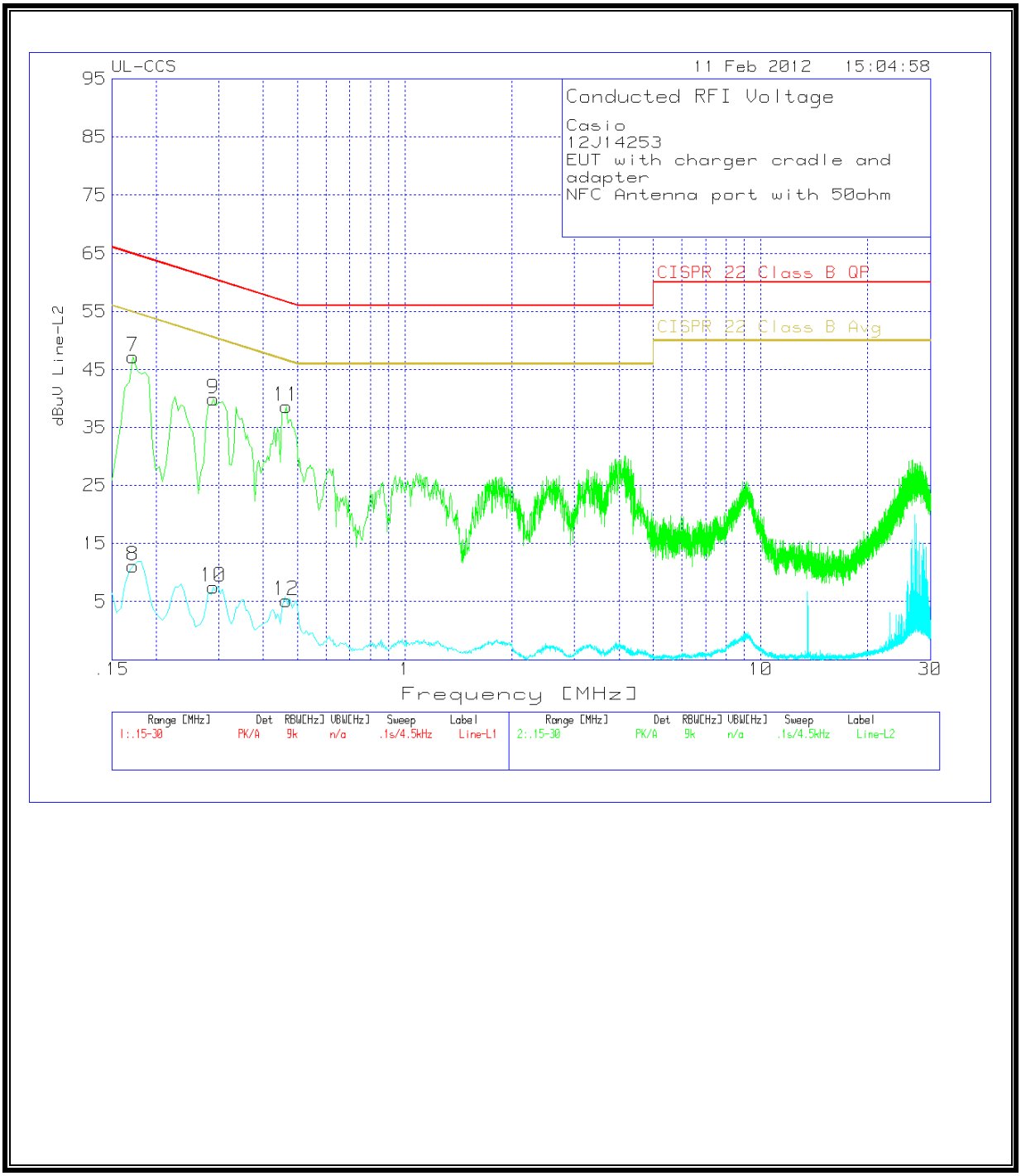
Line-L2 .15 - 30MHz

Test Frequency	Meter Reading	Detector	T24 IL L2.TXT [dB]	LC Cables 2&3.TXT [dB]	dBuV	CISPR 22 Class B QP	Margin	CISPR 22 Class B Avg	Margin
0.1725	47.11	PK	0.1	0	47.21	64.8	-17.59	-	-
0.1725	11.06	Av	0.1	0	11.16	-	-	54.8	-43.64
0.1725	47.11	PK	0.1	0	47.21	64.8	-17.59	-	-
0.1725	11.06	Av	0.1	0	11.16	-	-	54.8	-43.64
0.465	38.58	PK	0.1	0	38.68	56.6	-17.92	-	-
0.465	5.12	Av	0.1	0	5.22	-	-	46.6	-41.38

LINE 1 RESULTS



LINE 2 RESULTS



9. FREQUENCY STABILITY

LIMIT

§15.225 (e) The frequency tolerance of the carrier signal shall be maintained within ±0.01% of the operating frequency, over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

TEST PROCEDURE

ANSI / TIA / EIA 603 Clause 2.3.1 and 2.3.2

RESULTS

Reference Frequency: EUT Channel 13.56 MHz @ 20ºC **Limit: ± 100 ppm = 135.607 kHz**				
Power Supply	**Environment**	**Frequency Deviation Measureed with Time Elapse**		
(Vac)	**Temperature (ºC)**	**(MHz)**	**Delta (ppm)**	**Limit (ppm)**
115.00	50	13.5606700	0.000	± 100
115.00	40	13.5603300	0.251	± 100
115.00	30	13.5605000	0.125	± 100
115.00	***20***	***13.5606700***	***0.000***	***± 100***
115.00	10	13.5606700	0.000	± 100
115.00	0	13.5606700	0.000	± 100
115.00	-10	13.5605000	0.125	± 100
115.00	-20	13.5606700	0.000	± 100
97.15	20	13.5606700	0.000	± 100
132.25	20	13.5606700	0.000	± 100

10. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

RESULTS

Frequency (MHz)	99% Bandwidth (KHz)
13.56	23.006

99% BANDWIDTH