

FCC TEST REPORT (RFID)

RF110127C15-1
F-10C
VQK-F10C
Jan. 27, 2011
Feb. 08, 2011
Feb. 21, 2011

APPLICANT: FUJITSU LIMITED

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- **ISSUED BY:** Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
- LAB ADDRESS: No. 47, 14th Ling, Chia Pau Tsuen, Lin Kou Hsiang, Taipei Hsien 244, Taiwan, R.O.C.
- **TEST LOCATION:** No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
Original release	N/A	Feb. 21, 2011



1. CERTIFICATION

PRODUCT:Mobile phoneMODEL:F-10CBRAND:FOMAAPPLICANT:FUJITSU LIMITEDTESTED:Feb. 08, 2011TEST SAMPLE:ENGINEERING SAMPLESTANDARDS:FCC Part 15, Subpart C (Section 15.225)FCC Part 15, Subpart C (Section 15.215)ANSI C63.4-2003ANSI C63.10-2009

The above equipment (model: F-10C) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY

, DATE: Feb. 21, 2011

Pettie Chen / Specialist

APPROVED BY

Gary Chang / Assistant Manager

DATE: Feb. 21, 2011



2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 15, SUBPART C (SECTION 15.225, 15.215)				
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK	
	The field strength of any emissions within the band 13.553-13.567 MHz		Meet the requirement of limit. Minimum passing margin is -73.0dB at 13.56MHz.	
The field strength of any emissions 15.225 (d) appearing outside of the 13.110-14.010 MHz band			Meet the requirement of limit. Minimum passing margin is -8.0dB at 422.65MHz.	
15.225 (e)	The frequency tolerance	PASS	Meet the requirement of limit.	
15.215 (c)	20dB Bandwidth	PASS	Meet the requirement of limit.	

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Radiated emissions	30MHz ~ 200MHz	3.19 dB
	200MHz ~1000MHz	3.21 dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.



3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	Mobile phone	
MODEL NO.	F-10C	
FCC ID	VQK-F10C	
POWER SUPPLY	3.7Vdc (Li-ion battery) 5.4Vdc (Adapter)	
MODULATION TYPE	ASK	
OPERATING FREQUENCY	13.56MHz	
ANTENNA TYPE	Loop antenna	
DATA CABLE	NA	
I/O PORTS	Refer to user's manual	
ACCESSORY DEVICES	Battery	

NOTE:

1. The EUT is a Mobile phone. The test data are separated into following test reports.

	TEST STANDARD	REFERENCE REPORT
Bluetooth	FCC Part 15, Subpart C (Section 15.247)	RF110127C15
RFID FCC Part 15, Subpart C (Section 15.225, 15.215)		RF110127C15-1
WCDMA 850	FCC Part 22	RF110127C15-2
PCS 1900	FCC Part 24	RF110127C15-3

2. The EUT uses the following Li-ion battery:

BRAND	Fujitsu Limited
MODEL	F19
RATING	3.7Vdc, 830mAh
RATING	3.7Vdc, 830mAh

3. The following accessories are for support units only.

PRODUCT	BRAND	DESCRIPTION
Adapter	SIMK	I/P: 100-240Vac, 50-60Hz, 0.12A O/P: 5.4Vdc, 700mA
USB cable	NA	0.8m non-shielded cable without core

4. IMEI Code: 354690040001638.

5. The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

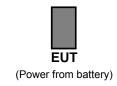


3.2 DESCRIPTION OF TEST MODES

The EUT only have one channel.

CHANNEL	FREQUENCY (MHz)
1	13.56

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST



* Test table



3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT CONFIGURE MODE		APPLICABLE TO)	DESCRIPTION	
	RE	FT	BW	DESCRIPTION	
-	\checkmark	\checkmark	\checkmark	-	
Where RE: Radiated Emission FT: Frequency Tolerance					

Where BW: 20dB Bandwidth

RADIATED EMISSION TEST:

- \bowtie Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, XYZ axis, antenna ports (if EUT with antenna diversity architecture).
- \boxtimes Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE	AXIS
-	1	1	ASK	Y

FREQUENCY TOLERANCE:

- \boxtimes Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, XYZ axis, antenna ports (if EUT with antenna diversity architecture).
- \boxtimes Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE	AXIS
-	1	1	ASK	Y

20dB BANDWIDTH:

- \bowtie Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, antenna ports (if EUT with antenna diversity architecture).
- \bowtie Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TYPE
-	1	1	ASK

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
RE	25deg. C, 65%RH, 1010 hPa	3.7Vdc	David Huang
FT	25deg. C, 65%RH, 1010 hPa	3.7Vdc	David Huang
BW	25deg. C, 65%RH, 1010 hPa	3.7Vdc	David Huang



3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RFID Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C (15.225) FCC Part 15, Subpart C (15.215) ANSI C63.4-2003 ANSI C63.10-2009

All test items have been performed and recorded as per the above standards.

NOTE: The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B. The test report has been issued separately.

3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit.



4. TEST TYPES AND RESULTS

4.1 RADIATED EMISSION MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in \S 15.209.

FREQUENCIES (MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE (meters)
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

NOTE:

- 1. The lower limit shall apply at the transition frequencies.
- 2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
- 3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.



4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESI7	838496/016	Dec. 27, 2010	Dec. 26, 2011
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	100115	Aug. 02, 2010	Aug. 01, 2011
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Apr. 28, 2010	Apr. 27, 2011
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-408	Jan. 06, 2011	Jan. 05, 2012
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170243	Dec. 27, 2010	Dec. 26, 2011
Preamplifier Agilent	8449B	3008A01961	Nov. 02, 2010	Nov. 01, 2011
Preamplifier Agilent	8447D	2944A10738	Nov. 02, 2010	Nov. 01, 2011
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	274041/4	Aug. 21, 2010	Aug. 20, 2011
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	283397/4	Aug. 21, 2010	Aug. 20, 2011
Software ADT.	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	010303	NA	NA
Antenna Tower Controller inn-co GmbH	CO2000	019303	NA	NA
Turn Table ADT.	TT100.	TT93021704	NA	NA
Turn Table Controller ADT.	SC100.	SC93021704	NA	NA

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The test was performed in HwaYa Chamber 4.

3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.

4. The FCC Site Registration No. is 988962.

5. The IC Site Registration No. is IC7450F-4.



4.1.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

NOTE:

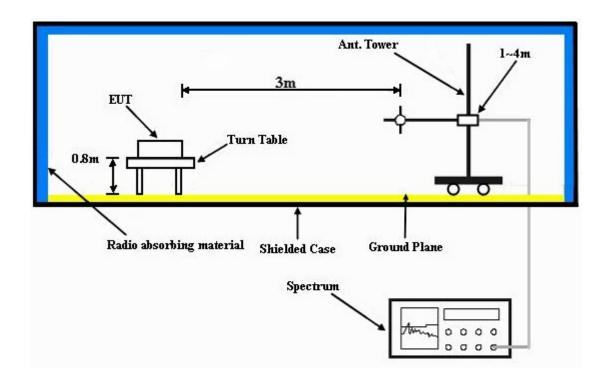
- 1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
- 2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
- 3. All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation.



4.1.5 TEST SETUP



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.6 EUT OPERATING CONDITIONS

Set the EUT under transmission condition continuously at specific channel frequency.



4.1.7 TEST RESULTS

EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL	Channel 1	FREQUENCY RANGE	13.553 ~ 13.567MHz	
INPUT POWER	3.7Vdc	DETECTOR FUNCTION	Quasi-Peak	
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1010 hPa	TESTED BY	David Huang	

	ANTENNA POLARITY & TEST DISTANCE: LOOP ANTENNA OPEN AT 3m							
No.Freq. (MHz)Emission Level (dBuV/m)Limit (dBuV/m)Margin (dB)Antenna HeightTable AngleRaw Value (dBuV)					Correction Factor (dB/m)			
1	13.56	47.4	124.0	-76.6	1.00	6	27.60	19.80

REMARKS:

1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)

- 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 - 3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

5. Above limits have been translated by the formula

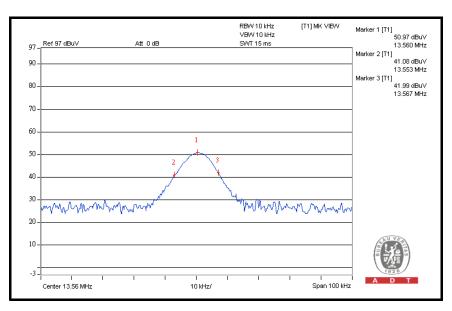
The measured field strength was extrapolated to distance 30 meters, using the formula that the limit of field strength varies as the inverse distance square (40dB per decade of distance) Example:

13.56MHz =

=

15848uV/m	30m
84dBuV/m	30m

- 84dBuV 84+20log(30/3)² = 3m
- 124dBuV/m =





EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL	Channel 1	FREQUENCY RANGE	13.553 ~ 13.567MHz	
INPUT POWER	3.7Vdc	DETECTOR FUNCTION	Quasi-Peak	
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1010 hPa	TESTED BY	David Huang	

	ANTENNA POLARITY & TEST DISTANCE: LOOP ANTENNA CLOSE AT 3m							
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	13.56	51.0	124.0	-73.0	1.00	154	31.20	19.80

REMARKS:

1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)

2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)

3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.

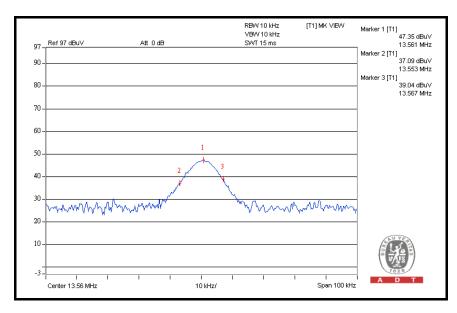
5. Above limits have been translated by the formula

The measured field strength was extrapolated to distance 30 meters, using the formula that the limit of field strength varies as the inverse distance square (40dB per decade of distance) Example: 30m

- 13.56MHz = 15848uV/m
 - = 84dBuV/m

30m

- $= 84+20\log(30/3)^2$ 3m
- = 124dBuV/m





EUT TEST CONDITION		MEASUREMENT DETAIL		
CHANNEL	Channel 1	FREQUENCY RANGE	Below 30MHz	
INPUT POWER	3.7Vdc	DETECTOR FUNCTION	Quasi-Peak	
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1010 hPa	TESTED BY	David Huang	

	ANTENNA POLARITY & TEST DISTANCE: LOOP ANTENNA OPEN AT 3m								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)	
1	13.55	37.1	69.5	-32.5	1.00	133	17.30	19.80	
2	13.57	39.1	69.5	-30.5	1.00	147	19.30	19.80	
3	27.12	29.2	69.5	-40.4	1.00	254	9.00	20.20	
	ANT	ENNA POLA	RITY & TES	ST DISTANC	E: LOOP A	NTENNA CL	.OSE AT 3n	n	
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)	
1	13.55	41.1	69.5	-28.5	1.00	146	21.30	19.80	
2	13.57	42.0	69.5	-27.6	1.00	271	22.20	19.80	
2									

REMARKS:

Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
The other emission levels were very low against the limit.
Margin value = Emission level – Limit value.



EUT TEST CONDITION		MEASUREMENT DETAIL			
CHANNEL Channel 1		FREQUENCY RANGE	Below 1000MHz		
INPUT POWER	3.7Vdc	DETECTOR FUNCTION	Quasi-Peak		
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH 1010 hPa	TESTED BY	David Huang		

	ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	Correction Factor (dB/m)	
1	107.67	27.7 QP	43.5	-15.8	1.50 H	259	16.00	11.70	
2	216.55	29.3 QP	46.0	-16.7	1.50 H	268	16.70	12.60	
3	243.77	30.2 QP	46.0	-15.8	1.25 H	277	16.80	13.40	
4	270.99	27.7 QP	46.0	-18.3	1.00 H	283	13.40	14.30	
5	453.75	25.1 QP	46.0	-20.9	2.00 H	10	5.00	20.10	
6	543.19	25.9 QP	46.0	-20.1	1.50 H	154	3.50	22.40	
		ANTENNA		Y & TEST DI	STANCE: V	ERTICAL A	Т 3 М		
		EMISSION				TABLE		CORRECTION	
NO.	FREQ. (MHz)	LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	ANGLE (Degree)	RAW VALUE (dBuV)	FACTOR (dB/m)	
NO. 1	FREQ. (MHz)			MARGIN (dB) -17.7				FACTOR	
NO. 1 2	, , ,	(dBuV/m)	(dBuV/m)	. ,	HEIGHT (m)	(Degree)	(dBuV)	FACTOR (dB/m)	
1	107.67	(dBuV/m) 25.8 QP	(dBuV/m) 43.5	-17.7	HEIGHT (m) 1.00 V	(Degree) 346	(dBuV)	FACTOR (dB/m) 11.70	
1 2	107.67 216.55	(dBuV/m) 25.8 QP 25.0 QP	(dBuV/m) 43.5 46.0	-17.7 -21.0	HEIGHT (m) 1.00 V 1.00 V	(Degree) 346 184	(dBuV) 14.10 12.40	FACTOR (dB/m) 11.70 12.60	
1 2 3	107.67 216.55 298.21	(dBuV/m) 25.8 QP 25.0 QP 24.9 QP	(dBuV/m) 43.5 46.0 46.0	-17.7 -21.0 -21.1	HEIGHT (m) 1.00 V 1.00 V 2.00 V	(Degree) 346 184 106	(dBuV) 14.10 12.40 9.70	FACTOR (dB/m) 11.70 12.60 15.20	

REMARKS: 1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).

2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).

3. The other emission levels were very low against the limit.

4. Margin value = Emission level – Limit value.



4.2 FREQUENCY STABILITY

4.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

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.

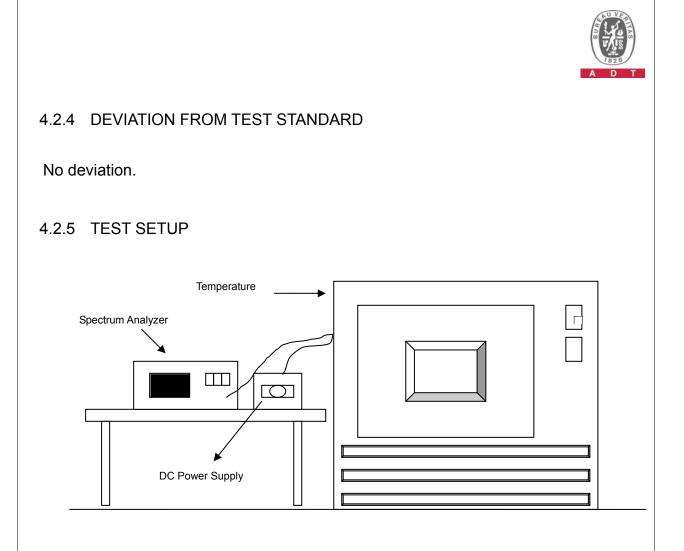
4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
R&S SPECTRUM ANALYZER	FSP40	100040	Jul. 17, 2010	Jul. 16, 2011
WIT STANDARD TEMPERATURE AND HUMIDITY CHAMBER	TH-4S-C	W981030	Jun. 28, 2010	Jun. 27, 2011

NOTE: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.2.3 TEST PROCEDURE

- a. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
- b. Turn the EUT on and couple its output to a spectrum analyzer.
- c. Turn the EUT off and set the chamber to the highest temperature specified.
- d. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
- e. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
- f. The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.



4.2.6 EUT OPERATING CONDITION

Same as Item 4.1.6.



4.2.7 TEST RESULTS

	FREQUEMCY STABILITY VERSUS TEMP.									
		0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE		
ТЕМР . (°С)	POWER SUPPLY (Vdc)	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift	
		(MHz)	%	(MHz)	%	(MHz)	%	(MHz)	%	
55	3.7	13.558800	-0.0088496	13.558868	-0.0083481	13.558845	-0.0085177	13.559115	-0.0065265	
50	3.7	13.558800	-0.0088496	13.559566	-0.0032006	13.558790	-0.0089233	13.559795	-0.0015118	
40	3.7	13.559500	-0.0036873	13.560078	0.0005752	13.560079	0.0005826	13.560240	0.0017699	
30	3.7	13.560100	0.0007375	13.561213	0.0089454	13.559600	-0.0029499	13.559441	-0.0041224	
20	3.7	13.561200	0.0088496	13.560804	0.0059292	13.560200	0.0014749	13.559400	-0.0044248	
10	3.7	13.559600	-0.0029499	13.559400	-0.0044248	13.560043	0.0003171	13.559104	-0.0066077	
0	3.7	13.559400	-0.0044248	13.559500	-0.0036873	13.559000	-0.0073746	13.559275	-0.0053466	
-10	3.7	13.560800	0.0058997	13.560800	0.0058997	13.560352	0.0025959	13.559384	-0.0045428	
-20	3.7	13.560200	0.0014749	13.560222	0.0016372	13.561000	0.0073746	13.559419	-0.0042847	

		0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
ТЕМР. (°С)	POWER SUPPLY (Vac)	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift
		(MHz)	%	(MHz)	%	(MHz)	%	(MHz)	%
	4.070	13.560758	0.0055900	13.560769	0.0056711	13.560760	0.0056047	13.560775	0.0057153
20	3.700	13.560791	0.0058333	13.560850	0.0062684	13.560882	0.0065044	13.560828	0.0061062
	3.330	13.560838	0.0061799	13.561019	0.0075147	13.560906	0.0066814	13.561063	0.0078392



4.3 20dB BANDWIDTH

4.3.1 LIMITS OF 20dB BANDWIDTH MEASUREMENT

The 20dB bandwidth shall be specified in operating frequency band.

4.3.2 TEST INSTRUMENTS

Same as Item 4.1.2.

4.3.3 TEST PROCEDURE

The bandwidth of the fundamental frequency was measured by spectrum analyzer with 1kHz RBW and 1kHz VBW. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation.

4.3.5 TEST SETUP

Same as Item 4.1.5.

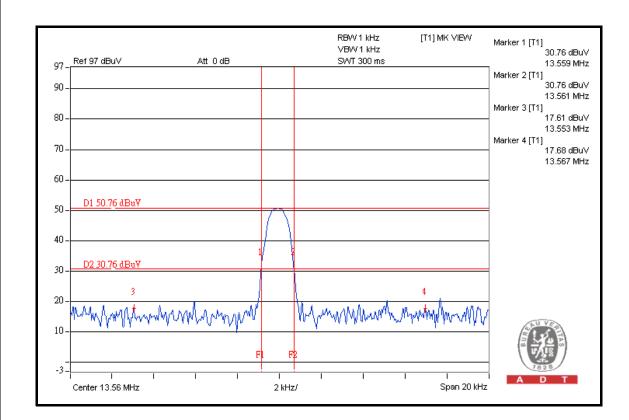
4.3.6 EUT OPERATING CONDITION

Same as Item 4.1.6.



4.3.7 TEST RESULTS

20dBc point (Low)	20dBc point (HIGH)	Operating frequency band (MHz)	PASS/FAIL	
13.559 MHz	13.561 MHz	13.553~13.567	PASS	





5. PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).



6. INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site: <u>www.adt.com.tw/index.5.phtml</u>. If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:

Tel: 886-2-26052180 Fax: 886-2-26051924 Hsin Chu EMC/RF Lab: Tel: 886-3-5935343 Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Telecom Lab: Tel: 886-3-3183232 Fax: 886-3-3185050

Web Site: www.adt.com.tw

The address and road map of all our labs can be found in our web site also.



7. APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

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