

FCC 47 CFR PART 18 Subpart C

Test Report

Product Type : 18.5" Bedside Infotainment Touch Monitor
Applicant : ONYX Healthcare Inc.
Address : 2F., No.135, Ln. 235, Baoqiao Rd., Xindian Dist., New Taipei City
231, Taiwan (R.O.C.)
Trade Name : ONYX
Model Number : ONYX-BE381DT-F2-1010 (ONYX-BE381DT-xx-xxxx Where "x" is
0~9, A~Z,"-" or blank)
Test Specification : FCC 47 CFR PART 18 Subpart C: Oct., 2012
ANSI C63.4: 2009
MP-5
Receive Date : Mar. 04, 2014
Test Period : Mar. 06 ~ 10, 2014
Issue Date : Mar. 25, 2014

Issue by

A Test Lab Techno Corp.
No. 140-1, Changan Street, Bade City,
Taoyuan County 334, Taiwan R.O.C.
Tel : +886-3-2710188 / Fax : +886-3-2710190



Taiwan Accreditation Foundation accreditation number: 1330

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Revision History

Rev.	Issue Date	Revisions	Revised By
00	Mar. 14, 2014	Initial Issue	
01	Mar. 20, 2014	Revised report information	Nico Peng
02	Mar. 25, 2014	Revised telephone model number	Nico Peng

Verification of Compliance

Issued Date: 03/25/2014

Product Type : 18.5" Bedside Infotainment Touch Monitor
Applicant : ONYX Healthcare Inc.
Address : 2F., No.135, Ln. 235, Baoqiao Rd., Xindian Dist., New Taipei City
231, Taiwan (R.O.C.)
Trade Name : ONYX
Model Number : ONYX-BE381DT-F2-1010 (ONYX-BE381DT-xx-xxxx Where "x" is
0~9, A~Z,"-" or blank)
EUT Rated Voltage : 12Vdc, 4.2A
Test Voltage : 120 Vac / 60 Hz
Applicable Standard : FCC 47 CFR PART 18 Subpart C: Oct., 2012
ANSI C63.4: 2009
MP-5

Test Result : Complied

Performing Lab. : A Test Lab Techno Corp.
No. 140-1, Changan Street, Bade City,
Taoyuan County 334, Taiwan R.O.C.



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<http://www.atl-lab.com.tw/e-index.htm>

The above equipment has been tested by A Test Lab Techno Corp., and found compliance with the requirements set forth in the technical standards mentioned above. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties.


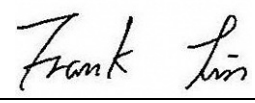
Approved By : 
(Manager) (Eric Chan) Reviewed By : 
(Testing Engineer) (Frank Lin)

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1 General Information

1.1 Summary of Test Result

Emission			
Standard	Item	Result	Remark
FCC 47 CFR PART 18 §18.307 (b)	Conducted Emission	PASS	Consumer Equipment
FCC 47 CFR PART 18 §18.305 (b)	Radiated Emission	PASS	Consumer Equipment

The test results of this report relate only to the tested sample(s) identified in this report. Manufacturer or whom it may concern should recognize the pass or fail of the test result.

1.2 Measurement Uncertainty

Test Item	Frequency Range	Uncertainty (dB)	
Conducted Emission	9kHz ~ 30MHz	± 2.02	
Radiated Emission	30MHz ~ 1000MHz	Horizontal	± 3.98
		Vertical	± 3.62
	1000MHz ~ 18000MHz	Horizontal	± 3.11
		Vertical	± 3.07
	18000MHz ~ 40000MHz	Horizontal	± 3.66
		Vertical	± 3.54

2 EUT Description

Product	18.5" Bedside Infotainment Touch Monitor
Trade Name	ONYX
Model Number	ONYX-BE381DT-F2-1010 (ONYX-BE381DT-xx-xxxx Where "x" is 0~9, A~Z,"-" or blank)
Model Difference	Those model numbers differ from each other in selling region
Applicant	ONYX Healthcare Inc. 2F., No.135, Ln. 235, Baoqiao Rd., Xindian Dist., New Taipei City 231, Taiwan (R.O.C.)
Manufacturer	ONYX Healthcare Inc. 2F., No.135, Ln. 235, Baoqiao Rd., Xindian Dist., New Taipei City 231, Taiwan (R.O.C.)
Component	
Credit card machine	ONYX, OPM-S02C-A1
Telephone	ONYX, OPM-T009-A2

I/O Port Description :

I/O Port Types	Q'TY	Test Description
1). HDMI Port	1	Connected to PC
2). D-Sub Port	1	Connected to PC
3). USB Port	2	Connected to HDD
4). Audio Port	2	Connected to Earphone & Microphone
5). Audio Port	2	Connected to PC
6). USB Port	2	Connected to PC
7). DC Power Port	1	Connected to AC Adapter
8). Signal Port	1	Connected to Credit card machine
9). Signal Port	1	Connected to Telephone

3 Test Methodology

3.1. Decision of Test Mode

3.1.1. The following test mode(s) were scanned during the preliminary test:

Pre-Test Mode
Mode 1: HDMI 1366x768 / 60Hz mode
Mode 2: D-SUB 1366x768 / 60Hz mode

3.1.2. After the preliminary scan, the following test mode was found to produce the highest emission level.

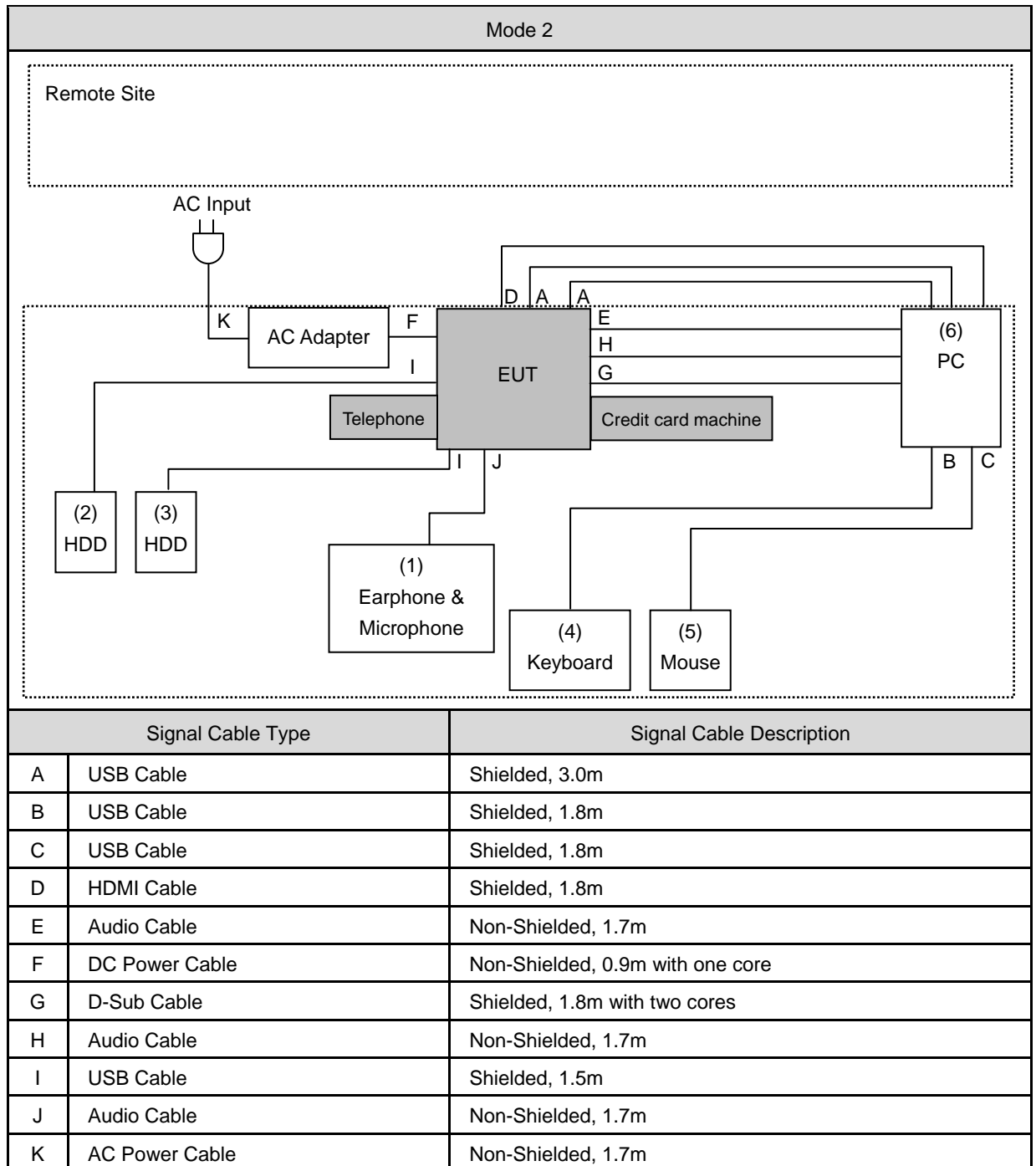
Final Test Mode		
Emission	Conducted Emission	Mode 2
	Radiated Emission	Mode 2

Then, the above highest emission mode of the configuration of the EUT and cable was chosen for all final test items.

3.2. EUT Exercise Software

1	Setup the EUT and simulators as shown on 3.3.
2	Turn on the power of all equipment.
3	EMC test program (Burn in test) can EUT confirmed video output on the screen.
4	The EUT will start to operate function.
5	Start to test get the worst reading.

3.3. Configuration of Test System Details



Devices Description					
	Product	Manufacturer	Model Number	Serial Number	Power Cord
(1)	Earphone & Microphone	N/A	N/A	N/A	N/A
(2)	HDD	WD	WDBACW0010HBK-SESN	WCCOS0852303	Power by EUT
(3)	HDD	WD	WDBACW0010HBK-SESN	WCCOT0837510	Power by EUT
(4)	Keyboard	DELL	SK-8115	MY-0DJ325-71619-71B-1197	Power by PC
(5)	Mouse	DELL	MS111-P	CN-093H7Y-71581-38Q-0EM0	Power by PC
(6)	PC	DELL	Inspiron 560 MT	724H6-U4239-PPXGK-2KWT3-K3F4HX16-96072	Non-Shielded, 1.8m

3.4. Test Site Environment

Items	Test Item	Required (IEC 60068-1)	Actual
Temperature (°C)	FCC part 18: 18.307 Conducted Emission	10-40	26
Humidity (%RH)		25-75	60
Barometric pressure (mbar)		860-1060	950
Temperature (°C)	FCC part 18: 18.305 Radiated Emission	10-40	26
Humidity (%RH)		25-75	60
Barometric pressure (mbar)		860-1060	950

4 Emission Test

4.1. Conducted Emission Measurement

4.1.1. Limit

Power Line

Frequency (MHz)	Quasi-peak (dBuV)	Average (dBuV)
0.15 - 0.5	66-56 *	56-46 *
0.50 - 5.0	56.00	46.00
5.0 - 30.0	60.00	50.00

Note: (1) The Equipment is for 18.307(b) other part 18 consumer devices.

(2) The tighter limit applies at the band edges.

(3) The limit of "*" marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

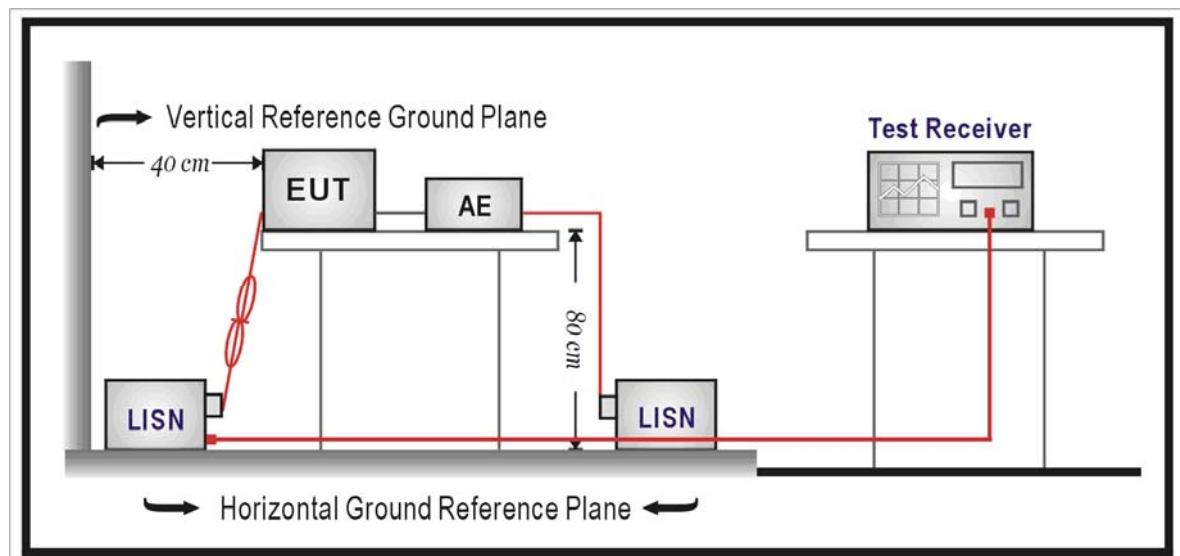
4.1.2. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Test Receiver	R&S	ESCI	100367	06/06/2013	(1)
LISN	R&S	ENV216	101040	03/07/2014	(1)
LISN	R&S	ENV216	101041	03/07/2014	(1)
Test Site	ATL	TE02	TE02	N.C.R.	-----

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.

Note: N.C.R. = No Calibration Request.

4.1.3. Test Setup

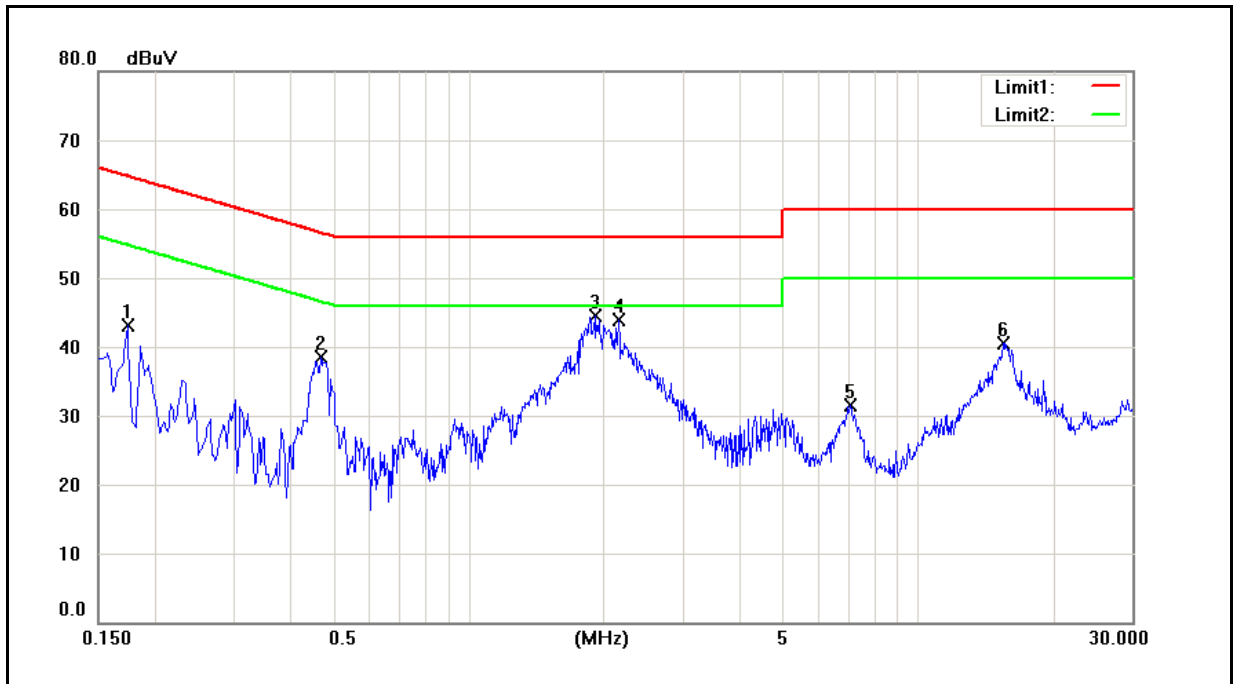


4.1.4. Test Procedure

- a) The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 ohm/50uH of coupling impedance for the measuring instrument.
- b) Interconnecting cables that hang closer than 40cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40cm long.
- c) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated. If required, using the correct terminating impedance. The overall length shall not exceed 1m.
- d) LISN at least 80cm from nearest part of EUT chassis.
- e) For the actual test configuration, please refer to the related item "Configuration of Test System Details" (section 3.3).

4.1.5. Test Result

Standard:	FCC Part 18 §18.307(b)	Line:	L1
Test item:	Conducted Emission	Power:	AC 120V/60Hz
Model Number:	ONYX-BE381DT-F2-1010	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	1	Date:	03/10/2014
		Test By:	Frank Lin
Description:			

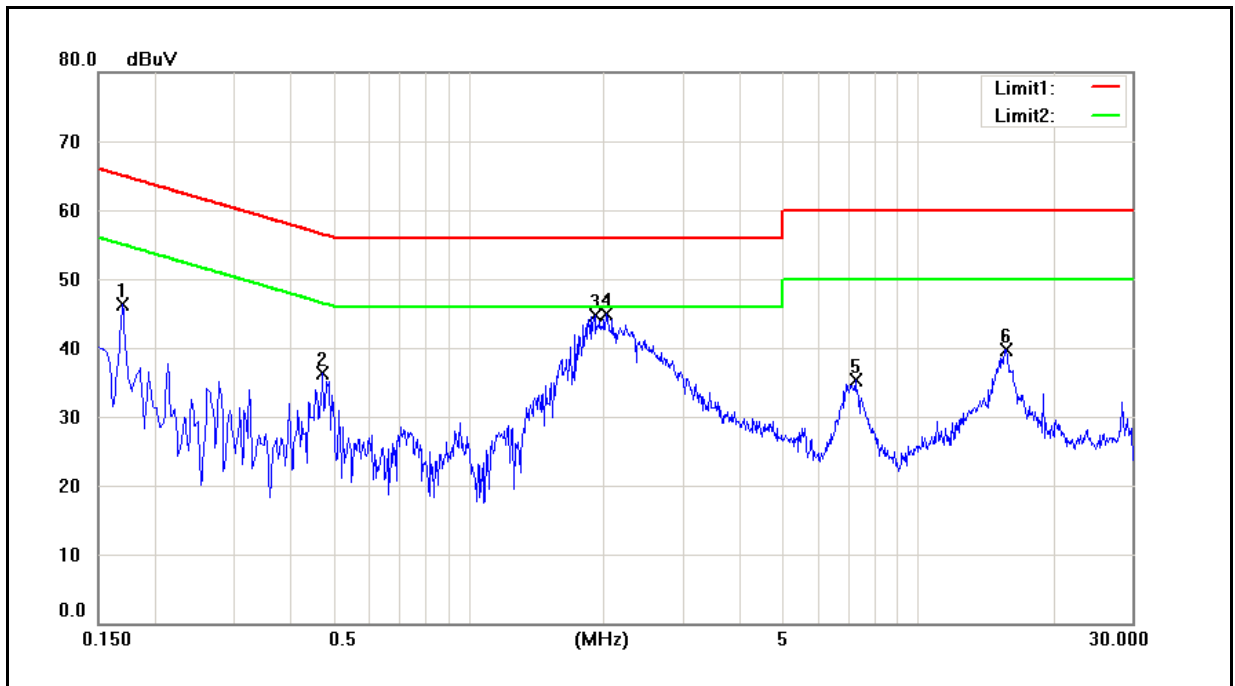


No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.1740	30.22	19.12	9.62	39.84	28.74	64.77	54.77	-24.93	-26.03	Pass
2	0.4700	26.61	17.71	9.62	36.23	27.33	56.51	46.51	-20.28	-19.18	Pass
3	1.9140	31.26	22.95	9.70	40.96	32.65	56.00	46.00	-15.04	-13.35	Pass
4	2.1580	28.88	21.70	9.70	38.58	31.40	56.00	46.00	-17.42	-14.60	Pass
5	7.0940	17.51	8.80	9.94	27.45	18.74	60.00	50.00	-32.55	-31.26	Pass
6	15.5060	27.93	21.59	9.88	37.81	31.47	60.00	50.00	-22.19	-18.53	Pass

Note: 1. Result (dBuV) = Correction factor (dB) + Reading(dBuV).

2. Correction factor (dB) = Cable loss (dB) + L.I.S.N. factor (dB).

Standard:	FCC Part 18 §18.307(b)	Line:	N
Test item:	Conducted Emission	Power:	AC 120V/60Hz
Model Number:	ONYX-BE381DT-F2-1010	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	1	Date:	03/10/2014
		Test By:	Frank Lin
Description:			



No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.1700	33.64	18.94	9.63	43.27	28.57	64.96	54.96	-21.69	-26.39	Pass
2	0.4740	24.92	15.30	9.63	34.55	24.93	56.44	46.44	-21.89	-21.51	Pass
3	1.9140	31.77	24.57	9.70	41.47	34.27	56.00	46.00	-14.53	-11.73	Pass
4	2.0260	31.62	25.16	9.70	41.32	34.86	56.00	46.00	-14.68	-11.14	Pass
5	7.2540	20.42	11.98	9.98	30.40	21.96	60.00	50.00	-29.60	-28.04	Pass
6	15.7540	25.73	20.16	9.96	35.69	30.12	60.00	50.00	-24.31	-19.88	Pass

Note: 1. Result (dBuV) = Correction factor (dB) + Reading(dBuV).

2. Correction factor (dB) = Cable loss (dB) + L.I.S.N. factor (dB).

4.1.6. Test Photograph

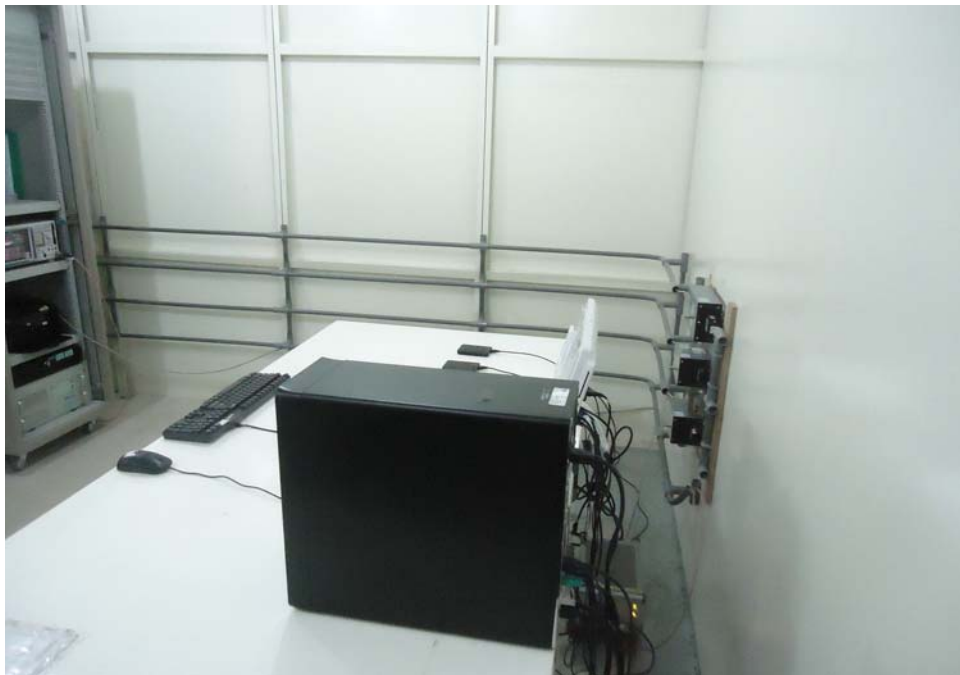
Test Mode: Mode 2

Description: Front View of Conducted Test



Test Mode: Mode 2

Description: Back View of Conducted Test



4.2. Radiated Interference Measurement

4.2.1. Limit

Operating Frequency (MHz)	Measurement Distance at 300 meters		Measurement Distance at 3 meters
	(uV/m)	(dBuV/m)	(dBuV/m)
Any ISM	25	27.96	67.96
Any non-ISM	15	23.52	63.52

Note: (1) The Equipment is for 18.305(b). Any type unless otherwise specified (miscellaneous) operating frequency in any non-ISM frequency.

(2) Limitation expressed in dBuV/m is calculated by $20\log$ emission level (uV/m).

(3) Distance extrapolation factor = $20\log$ (specific distance / test distance) (dB), Limit line = specific limits (dBuV/m) + distance extrapolation factor.

4.2.2. Test Instruments

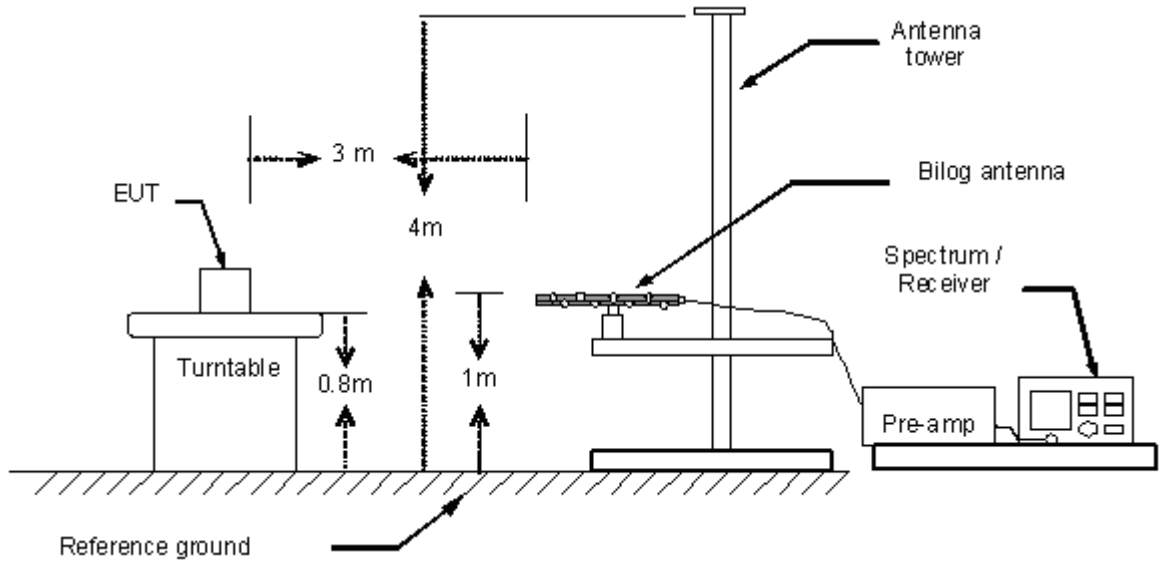
3 Meter Chamber					
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/16/2013	(1)
Amplifier	EM	EM330	060545	11/18/2013	(1)
Amplifier	Mini-Circuits	ZVA-213-S+	467900926	05/26/2013	(1)
RF Pre-selector	Agilent	N9039A	MY46520255	05/16/2013	(1)
Horn Antenna (1~18GHz)	ETS-Lindgren	3117	00128055	08/08/2013	(1)
Horn Antenna (18~40GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9170	9170-320	06/13/2013	(1)
Loop Antenna	COM-POWER CORPORATION	AL-130	121014	01/28/2014	(1)
Test Site	ATL	TE09	TE09	05/09/2013	(1)

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.

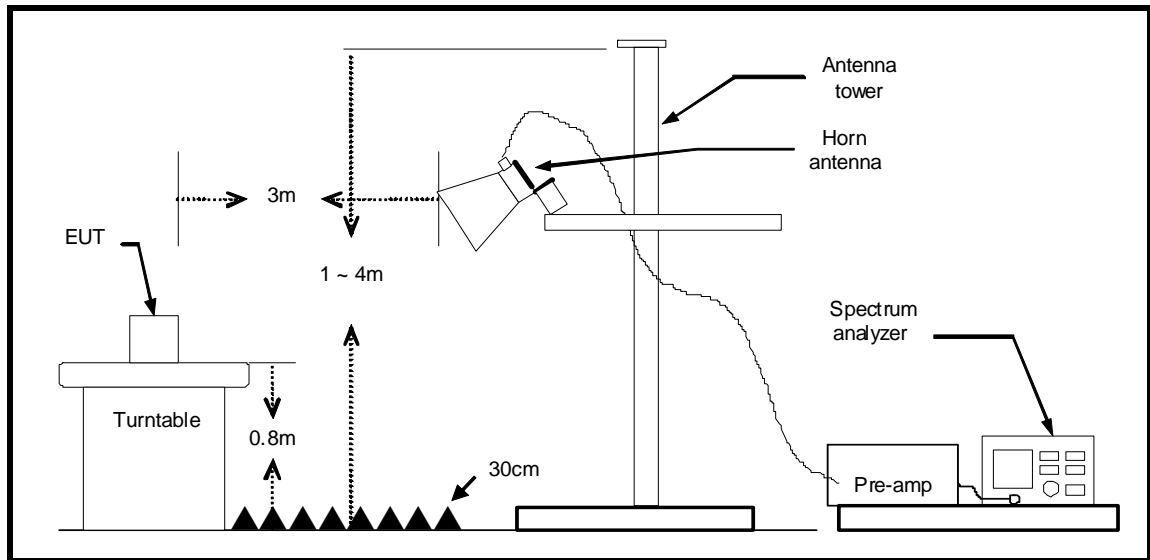
Note: N.C.R. = No Calibration Request.

4.2.3. Setup

30MHz ~ 1 GHz



Above 1GHz

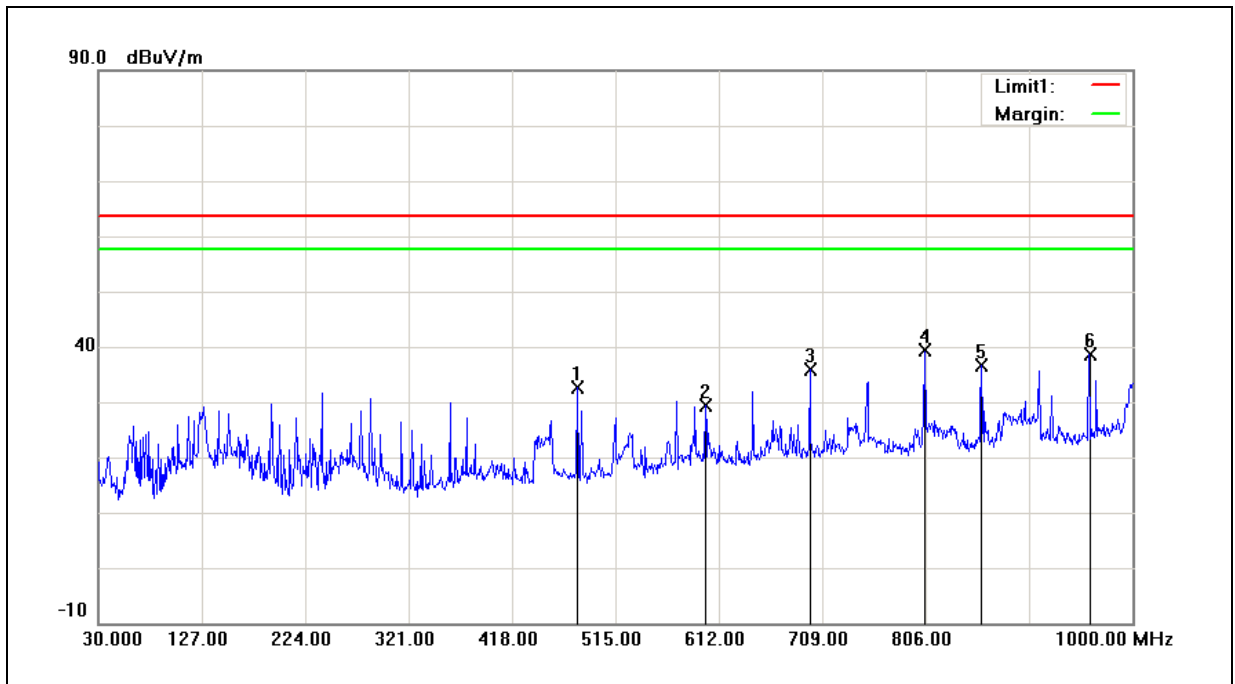


4.2.4. Test Procedure

- a) The measuring distance of at 3m shall be used for measurement at frequency above 30MHz. For frequencies above 30MHz, any suitable measuring distance may be used.
- b) The EUT was placed on the top of a rotating table 0.8m above the ground at 3m open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- c) The height of the equipment or the substitution antenna shall be 0.8m; the height of the test antenna shall vary between 1m to 4m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d) The initial step in collecting radiated emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are marked and then Quasi Peak detector mode re-measured.
- e) If the Peak mode measured value compliance with and lower than Quasi Peak mode limit, the EUT shall be deemed to meet QP limits and then no additional QP mode measurement performed.
- f) In case the emission is lower than 30MHz, loop antenna has be used for measurement and the recorded data should be QP measured by receiver. High – low scan is not required in this case.
- g) In the frequency range of 9kHz – 30MHz, magnetic field measurements may be performed. The method is applicable for radiated radio noise from all units, cables, power coeds and interconnect cabling or wring. A calibrated loop antenna as specified in ANSI C63.4 4.151 shall be positioned with its plane vertical at the specified distance from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. For certain application, the loop antenna may also need to be positioned horizontally at the specified distance from the EUT. The center of the loop shall be 1m above the dround.

4.2.5. Test Result

Standard:	FCC Part 18 §18.305(b)	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	ONYX-BE381DT-F2-1010	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	1 (30MHz~1GHz)	Date:	03/06/2014
Ant.Polar.:	Horizontal	Test By:	Frank Lin

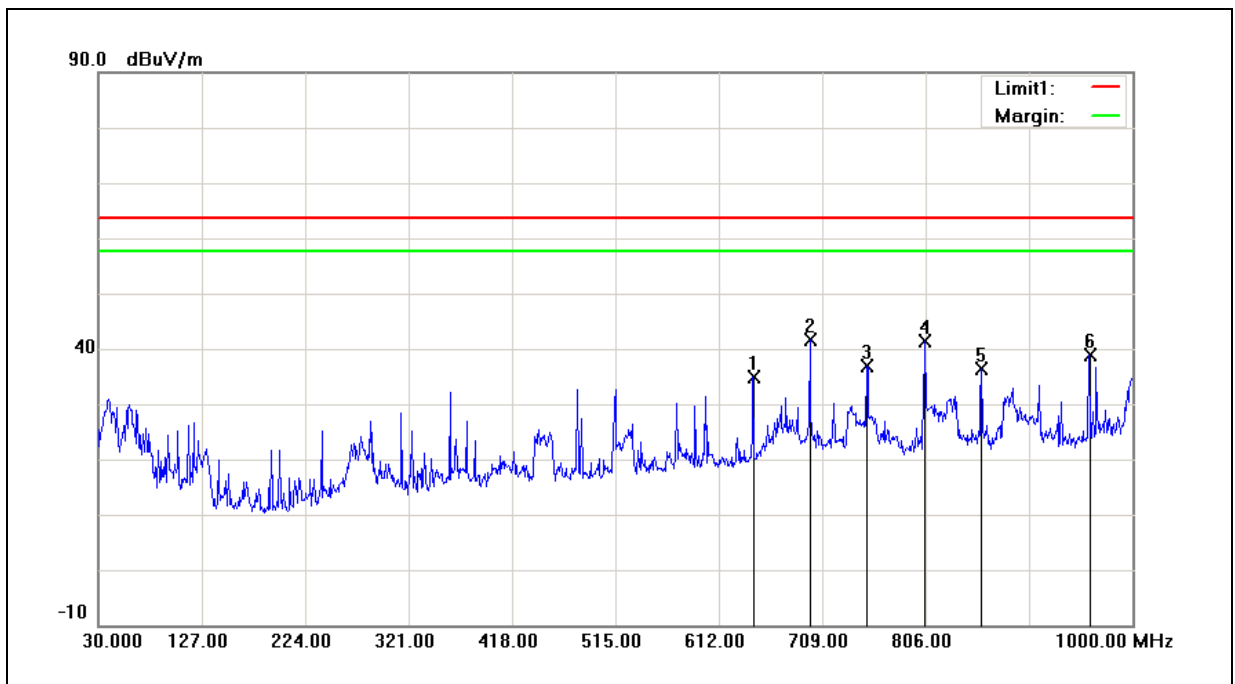


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	480.0000	41.85	-9.30	32.55	63.52	-30.97	100	0	peak
2	600.0000	36.09	-6.78	29.31	63.52	-34.21	100	0	peak
3	698.0000	41.60	-5.61	35.99	63.52	-27.53	100	0	peak
4	805.5000	43.05	-3.79	39.26	63.52	-24.26	100	0	peak
5	859.0000	39.70	-2.98	36.72	63.52	-26.80	100	0	peak
6	960.0000	40.09	-1.53	38.56	63.52	-24.96	100	0	peak

Note: 1. Result (dBuV) = Correction factor (dB) + Reading(dBuV).

2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

Standard:	FCC Part 18 §18.305(b)	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	ONYX-BE381DT-F2-1010	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	1 (30MHz~1GHz)	Date:	03/06/2014
Ant.Polar.:	Vertical	Test By:	Frank Lin

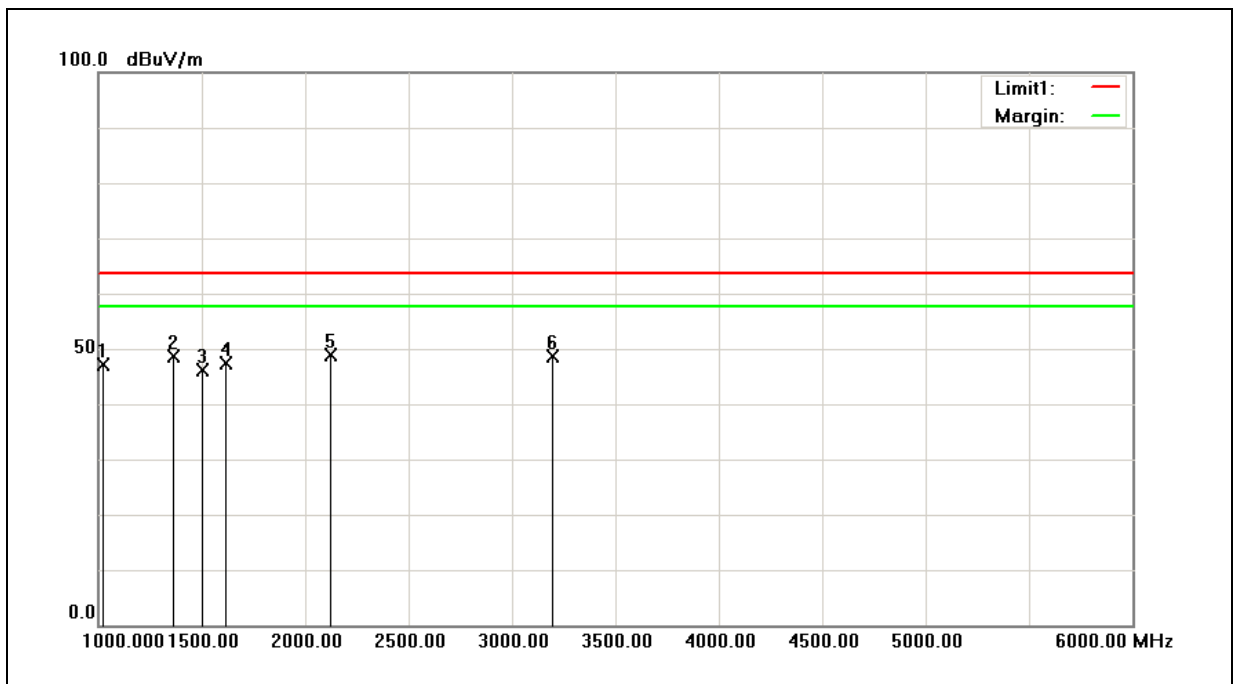


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	644.5000	40.79	-5.93	34.86	63.52	-28.66	100	0	peak
2	698.0000	47.16	-5.61	41.55	63.52	-21.97	100	0	peak
3	751.5000	41.06	-4.29	36.77	63.52	-26.75	100	0	peak
4	805.5000	45.17	-3.79	41.38	63.52	-22.14	100	0	peak
5	859.0000	39.39	-2.98	36.41	63.52	-27.11	100	0	peak
6	960.0000	40.49	-1.53	38.96	63.52	-24.56	100	0	peak

Note: 1. Result (dBuV) = Correction factor (dB) + Reading(dBuV).

2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

Standard:	FCC Part 18 §18.305(b)	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	ONYX-BE381DT-F2-1010	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	1 (1GHz ~6GHz)	Date:	03/06/2014
Ant.Polar.:	Horizontal	Test By:	Frank Lin

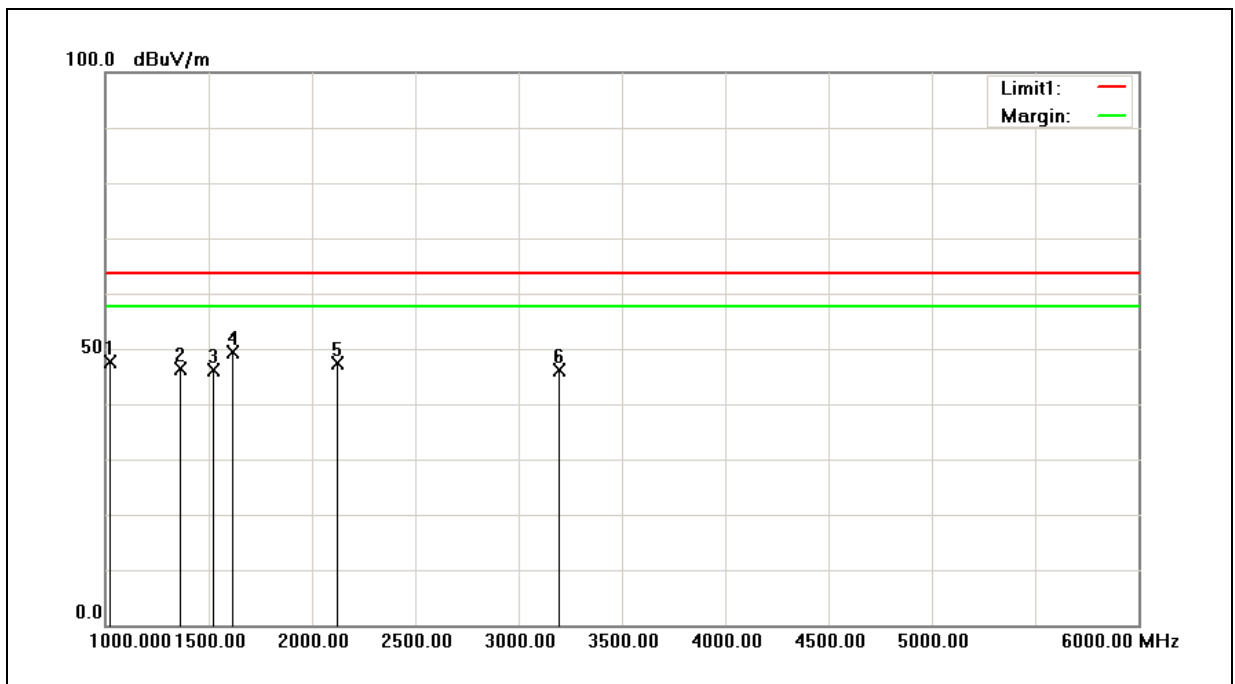


No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	1025.000	70.90	-23.74	47.16	63.52	-16.36	100	198	peak
2	1365.000	72.18	-23.46	48.72	63.52	-14.80	100	69	peak
3	1500.000	69.36	-23.34	46.02	63.52	-17.50	100	32	peak
4	1615.000	69.83	-22.44	47.39	63.52	-16.13	200	221	peak
5	2125.000	68.19	-19.19	49.00	63.52	-14.52	200	107	peak
6	3195.000	65.44	-16.91	48.53	63.52	-14.99	100	296	peak

Note: 1. Result (dBuV) = Correction factor (dB) + Reading(dBuV).

2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

Standard:	FCC Part 18 §18.305(b)	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	ONYX-BE381DT-F2-1010	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	1 (1GHz ~6GHz)	Date:	03/06/2014
Ant.Polar.:	Horizontal	Test By:	Frank Lin



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (°)	Remark
1	1025.000	71.33	-23.74	47.59	63.52	-15.93	200	61	peak
2	1365.000	69.93	-23.46	46.47	63.52	-17.05	200	25	peak
3	1520.000	69.31	-23.19	46.12	63.52	-17.40	100	90	peak
4	1615.000	71.83	-22.44	49.39	63.52	-14.13	100	203	peak
5	2125.000	66.45	-19.19	47.26	63.52	-16.26	100	110	peak
6	3195.000	63.01	-16.91	46.10	63.52	-17.42	200	349	peak

Note: 1. Result (dBuV) = Correction factor (dB) + Reading(dBuV).

2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

4.2.6. Test Photograph

Test Mode: Mode 2

Description: Front View of Radiated Emission Test _ 30MHz~1GHz



Test Mode: Mode 2

Description: Back View of Radiated Emission Test _ 30MHz~1GHz



Test Mode: Mode 2

Description: Front View of Radiated Emission Test _ Above 1GHz



Test Mode: Mode 2

Description: Back View of Radiated Emission Test _ Above 1GHz



5 EUT Photograph

(1) EUT Photo



(2) EUT Photo



(3) EUT Photo



(4) EUT Photo



(5) EUT Photo



(6) EUT Photo



(7) EUT Photo



(8) EUT Photo



(9) EUT Photo



(10)EUT Photo



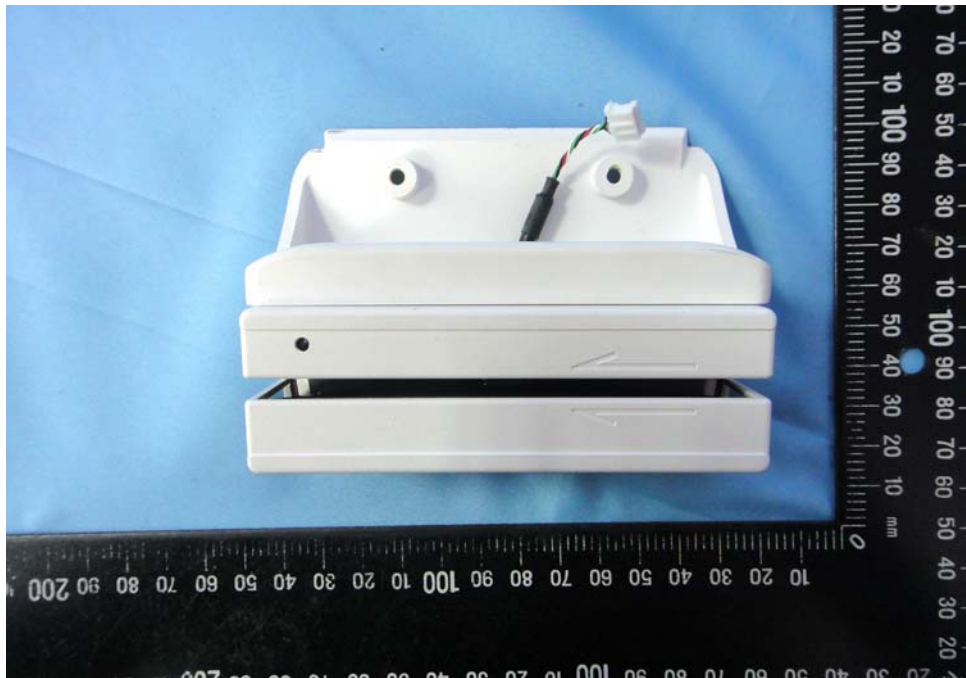
(11)EUT Photo



(12)EUT Photo



(13)EUT Photo



(14)EUT Photo



(15)EUT Photo



(16)EUT Photo



(17)EUT Photo



(18)EUT Photo



(19)EUT Photo



(20)EUT Photo



(21)EUT Photo



(22)EUT Photo



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