AUDIX Technology Corp.
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Wireless Power Transfer
Test Report

for

Qisda Corporation

157, Shan-Ying Road, Gueishan,
Taoyuan 333, Taiwan, R.O.C.

Brand	**:**	**DELL**
Product Name	**:**	**Flat Panel Monitor**
Model Name	**:**	**S2317HJb**
FCC ID	**:**	**VRSS2317HJB**
IC	**:**	**8729A-S2317HJB**
REF. No.	**:**	**RL-19617**

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TEST REPORT CERTIFICATION

Applicant	:	Qisda Corporation
Manufacture #1	:	Qisda Corporation
Manufacture #2	:	Qisda (Suzhou) Co., Ltd.
Product Name	:	Flat Panel Monitor
Model No.	:	S2317HJb
Serial No.	:	N/A
Brand	:	DELL
Ref. No.	:	RL-19617
Power Supply	:	DC 19.5V

Applicable Standards:

FCC Rules and Regulations Part 15 Subpart C, Oct. 2014
RSS-Gen (Issue 4), November 2014
RSS-216 (Issue 1), November 2014
ANSI C63.10:2013

AUDIX Technology Corp. tested the equipment mentioned in accordance with the requirements set forth in the above standards. Test results indicate that the equipment tested is capable of demonstrating compliance with the requirements as documented within this report. *AUDIX Technology Corp.* does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens and samples.

Date of Test: 2015. 11. 14 ~ 12. 01 Date of Report: 2015. 12. 02

Producer: Sabrina Wang
(Sabrina Wang/Administrator)

Signatory: Ben Cheng
(Ben Cheng/Manager)

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1. REPORT HISTORY

Revision	Date	Revision Summary	Report Number
0	2015. 12. 02	Original Report.	EM-F150698

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2. SUMMARY OF TEST RESULTS

Rule	Description	Results
15.207/RSS-Gen §8.8	Conducted Emission	**PASS**
15.209/RSS-Gen §8.9	Field strength Measurements.	**PASS**
RSS-Gen §8.1	Emission Bandwidth	**PASS**

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3. GENERAL INFORMATION

3.1. Description of EUT

Product	Flat Panel Monitor
Model Number	S2317HJb
Serial Number	N/A
Brand Name	DELL
Serial Number	N/A
Ref. No	RL-19617
Applicant	Qisda Corporation 157, Shan-Ying Road, Gueishan, Taoyuan 333, Taiwan, R.O.C.
Manufacturer	#1 Qisda Corporation 157, Shan-Ying Road, Gueishan, Taoyuan 333, Taiwan, R.O.C.
	#2 Qisda (Suzhou) Co., Ltd. No. 169, Zhujiang Road, New District, Suzhou, Jiangsu Province, P.R. China
Power Supply Rating	Refer to AC adapter rating.
AC Adapter	#1 DELL (Chicony), M/N HA65NS5-00 I/P: 100-240V~ 50-60Hz 1.7A O/P: 19.5V 3.34A O/P Cable: Unshielded, Undetachable, 1.8m, Bonded a ferrite core
	#2 DELL (Delta), M/N DA65NM111-00 I/P: 100-240V~ 1.6A 50-60Hz O/P: 19.5V 3.34A O/P Cable: Unshielded, Undetachable, 1.8m
AC Power Cord	Unshielded, Detachable, 1.8m (3C)
HDMI Cable	Shielded, Detachable, 1.8m
Stand Power Cable:	Unshielded, Undetachable, 0.38m Bonded a ferrite core
WPC Module	SEMTECH, M/N TS80000
Antenna Type	Loop Antenna
Date of Receipt of Sample	2015. 11. 04

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Interface Ports	**Bottom View:** (1) One Power-adapter Port (2) One Line-Out Port (3) One Line-In Port (4) One HDMI port (5) One VGA port **Stand (Wireless Charging Stand) View:** (6) One DC Adapter Port (7) One DC Out Cable

3.2. EUT Specifications Assessed in Current Report

Mode	Fundamental Range	Channel Number	Modulation
WPC	110~205 kHz	95	---

3.3. Tested Supporting System List

3.3.1. Support Peripheral Unit

No.	Product	Brand	Model No.	Serial No.	FCC ID
1.	Qi-Wireless-Charger	Fusion	WTU-050	N/A	N/A

3.4. Setup Configuration

3.4.1. EUT Configuration for Power Line and Radiated Emission

3.5. Operating Condition of EUT

To Set EUT on RF function under continues transmitting.

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3.6. Description of Test Facility

Test Firm Name	:	AUDIX Technology Corporation EMC Department No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan
Test Location & Facility	:	No. 8 Shielded Room No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan Semi-Anechoic Chamber No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan Renewal on May 06, 2015 Federal Communication Commission Registration Number: 90993
NVLAP Lab. Code	:	200077-0
TAF Accreditation No	:	1724

3.7. Measurement Uncertainty

Test Item	Frequency Range	Uncertainty
Conduction Test	150kHz~30MHz	± 3.5dB
Radiation Test (Distance: 3m)	30MHz~1000MHz	± 4.70dB
	Above 1GHz	± 2.94dB

Remark：Uncertainty = $ku_c(y)$

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4. MEASUREMENT EQUIPMENT LIST

4.1. Conducted Emission Measurement

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
1.	Test Receiver	R&S	ESR3	101774	2015. 02. 06	2016. 02. 06
2.	A.M.N.	R&S	ENV4200	825358/003	2015. 04. 07	2016. 04. 06
3.	Pulse Limiter	R&S	ESH3-Z2	100354	2015. 01. 17	2016. 01. 16

4.2. Radiated Emission Measurement

4.2.1. Frequency Range 9kHz~30MHz

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
1.	Spectrum Analyzer	Agilent	N9010A-526	MY53400071	2015. 09. 14	2016. 09. 13
2.	Test Receiver	R & S	ESCS30	100338	2015. 06. 24	2016. 06. 23
3.	Loop Antenna	R&S	HFH2-Z2	891847/27	2014. 12. 26	2015. 12. 25

4.2.2. Frequency Range 30MHz~1000MHz

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
1.	Spectrum Analyzer	Agilent	N9010A-526	MY53400071	2015. 09. 14	2016. 09. 13
2.	Test Receiver	R & S	ESCS30	100338	2015. 06. 24	2016. 06. 23
3.	Amplifier	HP	8447D	2944A06305	2015. 02. 12	2016. 02. 11
4.	Bilog Antenna	CHASE	CBL6112D	33821	2015. 02. 27	2016. 02. 26

4.3. RF Conducted Measurement

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Agilent	N9030A-526	MY53310269	2015. 11. 28	1 Year
2.	Loop Antenna	ETS	7405	N/A	N.C.R	N.C.R

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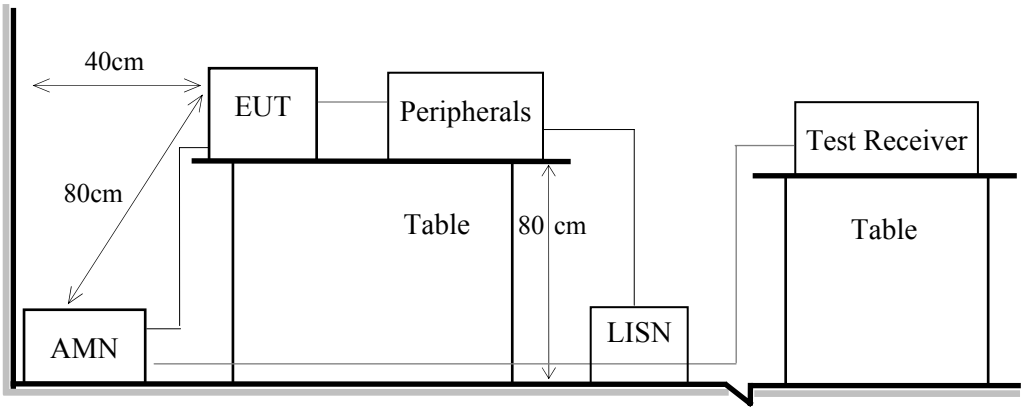
5. CONDUCTED EMISSION MEASUREMET

5.1. Block Diagram of Test Setup

Shielded Room Setup Diagram



Ground Plane

5.2. Power Line Conducted Emission Limit

Frequency	Conducted Limit	
	Quasi-Peak Level	Average Level
150kHz ~ 500kHz	66 ~ 56 dBμV	56 ~ 46 dBμV
500kHz ~ 5MHz	56 dBμV	46 dBμV
5MHz ~ 30MHz	60 dBμV	50 dBμV

Remark 1.: If the average limit is met when using a Quasi-Peak detector, the measurement using the average detector is not required.
2.: The lower limit applies to the band edges.

5.3. Test Procedure

5.3.1. To set up the EUT as indicated in ANSI C 63.10. The EUT was placed on the table which has 80 cm height to the ground and 40 cm distance to the conducting wall.

5.3.2. Power supplier of the EUT was connected to the AC mains through an Artificial Mains Network (A.M.N.).

5.3.3. The AC power supplies to all peripheral devices must be provided through line impedance stabilization network (L.I.S.N.)

5.3.4. Checking frequency range from 150 kHz to 30 MHz and record the emission which does not have 20 dB below limit.

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5.4. Conducted Emission Measurement Results

PASSED.

Test Date	2015/11/14	Temp./Hum.	26℃/57%
Test Voltage	DC 19.5V (Via AC Adaptor, M/N HA65NS5-00)		

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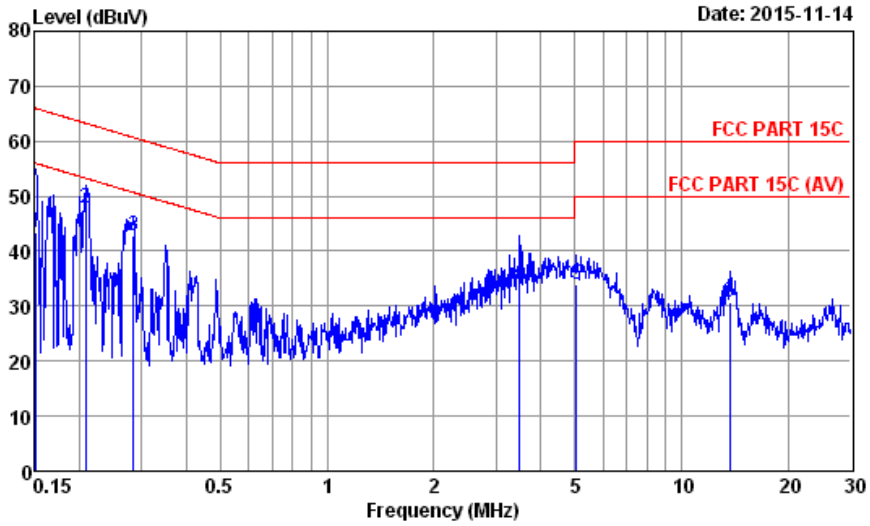

Site no. : No.8 Shielded Room
Condition : ENV4200 358 (H)
Limit : FCC PART 15C
Env. / Ins. : 26°C / 57% ESR3 (1774)
EUT : S2317HJb
Power Rating : 120Vac/60Hz
Test Mode : Operating
ADP:HA65NS5-00

Data no. : 3
Phase : NEUTRAL
Engineer : Tim

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.151	10.25	0.03	9.87	23.31	43.46	65.94	22.48	QP
2	0.208	10.27	0.03	9.87	27.62	47.79	63.27	15.48	QP
3	0.285	10.24	0.03	9.87	22.71	42.85	60.68	17.83	QP
4	3.491	10.20	0.12	9.88	14.35	34.55	56.00	21.45	QP
5	5.058	10.19	0.15	9.90	13.81	34.05	60.00	25.95	QP
6	13.623	10.15	0.24	9.92	10.36	30.67	60.00	29.33	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Pulse Att. + Reading.

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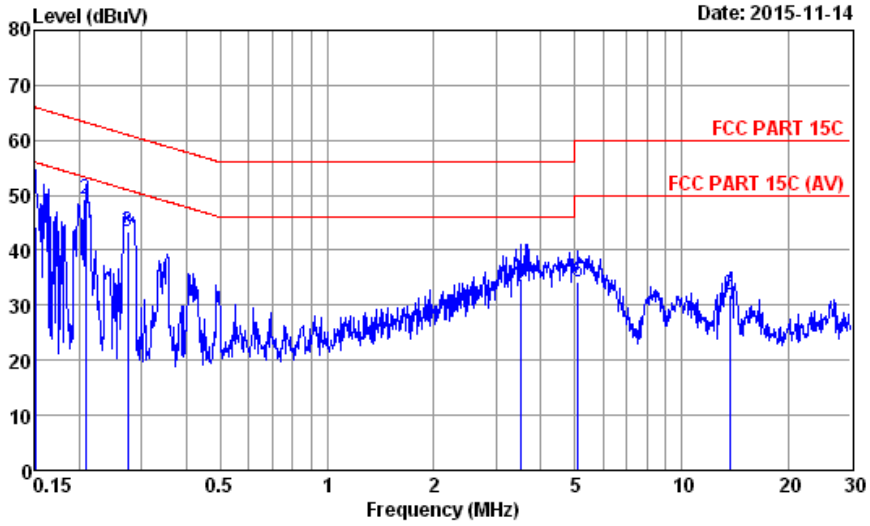

Site no. : No.8 Shielded Room
Condition : ENV4200 358 (H)
Limit : FCC PART 15C
Env. / Ins. : 26°C / 57% ESR3 (1774)
EUT : S2317HJb
Power Rating : 120Vac/60Hz
Test Mode : Operating
ADP:HA65NS5-00

Data no. : 4
Phase : LINE
Engineer : Tim

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.151	10.25	0.03	9.87	24.18	44.33	65.97	21.64	QP
2	0.208	10.29	0.03	9.87	29.19	49.38	63.27	13.89	QP
3	0.274	10.26	0.03	9.87	23.35	43.51	60.98	17.47	QP
4	3.509	10.21	0.12	9.88	14.50	34.71	56.00	21.29	QP
5	5.112	10.20	0.15	9.90	13.97	34.22	60.00	25.78	QP
6	13.623	10.13	0.24	9.92	11.49	31.78	60.00	28.22	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Pulse Att. + Reading.

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Test Date	2015/11/14	Temp./Hum.	26℃/57%
Test Voltage	DC 19.5V (Via AC Adaptor, M/N DA65NM111-00)		

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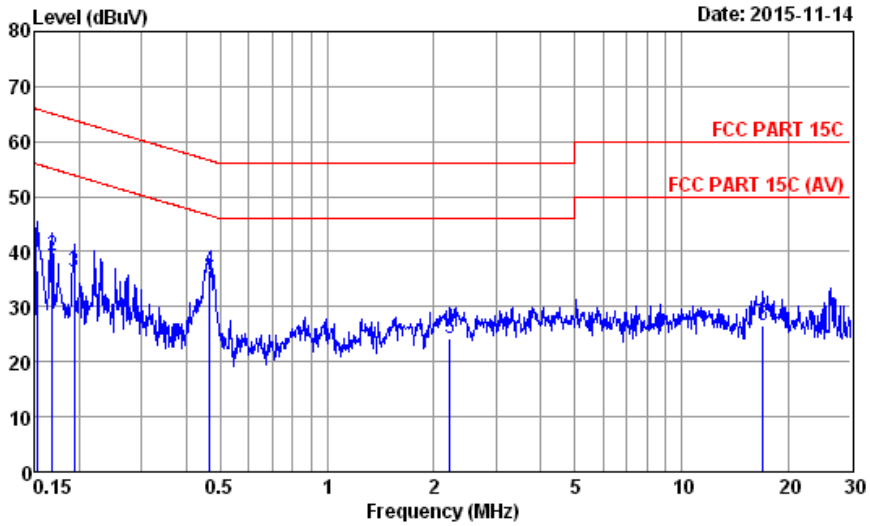

Site no. : No.8 Shielded Room
Condition : ENV4200 358 (H)
Limit : FCC PART 15C
Env. / Ins. : 26°C / 57% ESR3 (1774)
EUT : S2317HJb
Power Rating : 120Vac/60Hz
Test Mode : Operating
ADP:DA65NM111-00

Data no. : 1
Phase : LINE
Engineer : Tim

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.152	10.25	0.03	9.87	16.38	36.53	65.91	29.38	QP
2	0.168	10.27	0.03	9.87	18.96	39.13	65.08	25.95	QP
3	0.193	10.29	0.03	9.87	16.04	36.23	63.89	27.66	QP
4	0.466	10.22	0.03	9.88	16.62	36.75	56.58	19.83	QP
5	2.213	10.21	0.09	9.87	4.13	24.30	56.00	31.70	QP
6	16.928	10.11	0.26	9.93	6.25	26.55	60.00	33.45	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Pulse Att. + Reading.

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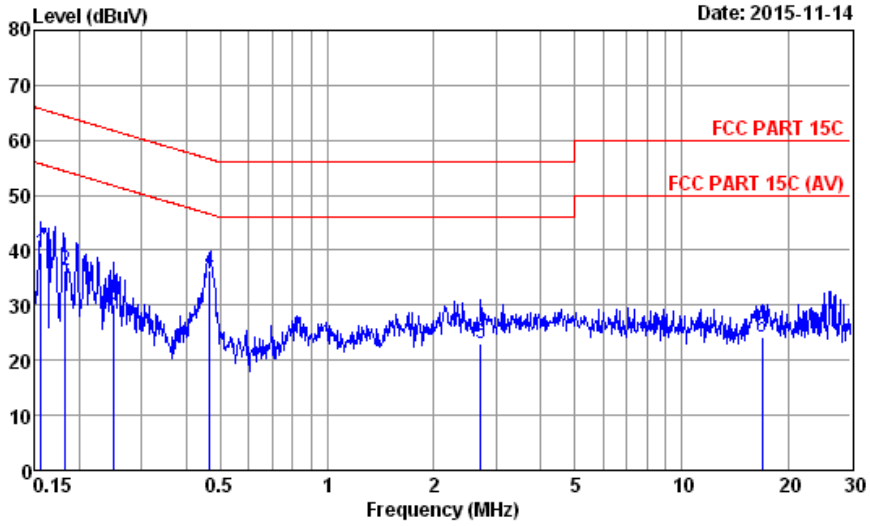

Site no. : No.8 Shielded Room
Condition : ENV4200 358 (H)
Limit : FCC PART 15C
Env. / Ins. : 26°C / 57% ESR3 (1774)
EUT : S2317HJb
Power Rating : 120Vac/60Hz
Test Mode : Operating
ADP:DA65NM111-00

Data no. : 2
Phase : NEUTRAL
Engineer : Tim

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBµV)	Emission Level (dBµV)	Limits (dBµV)	Margin (dB)	Remark
1	0.156	10.25	0.03	9.87	19.35	39.50	65.66	26.16	QP
2	0.182	10.26	0.03	9.87	16.10	36.26	64.37	28.11	QP
3	0.249	10.25	0.03	9.87	10.09	30.24	61.78	31.54	QP
4	0.466	10.20	0.03	9.88	16.34	36.45	56.58	20.13	QP
5	2.707	10.19	0.10	9.88	2.90	23.07	56.00	32.93	QP
6	16.839	10.13	0.26	9.93	3.80	24.12	60.00	35.88	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Pulse Att. + Reading.

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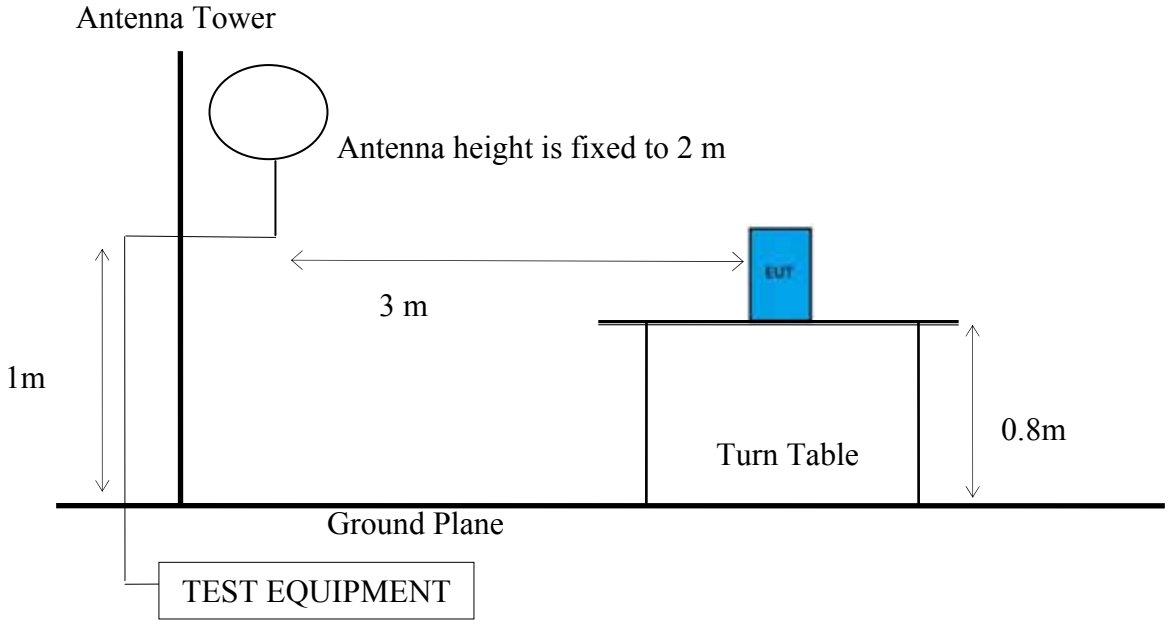
6. RADIATED SPURIOUS EMISSION MEASUREMENT

6.1. Block Diagram of Test Setup

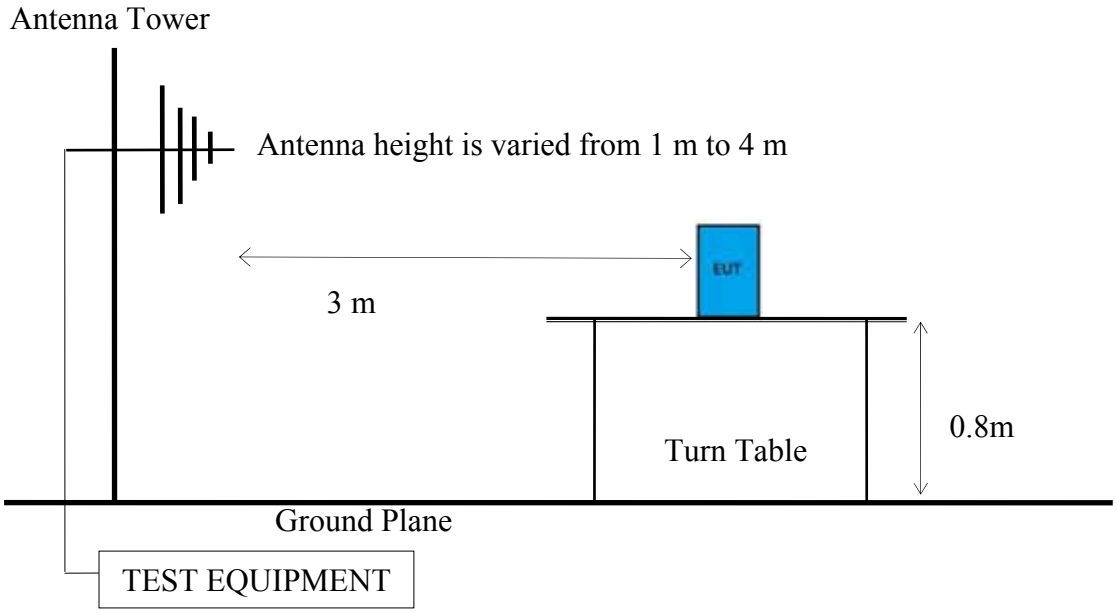
6.1.1. Block Diagram of EUT

Indicated as section 3.5

6.1.2. Setup Diagram for 9kHz-30MHz



6.1.3. Setup Diagram for 30MHz-1000MHz



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6.2. Radiated Spurious Emission Limits

Frequency (MHz)	Distance (m)	Limits	
		dBμV/m	μV/m
0.009 - 0.490	300	67.6	2400/kHz
0.490 - 1.705	30	87.6	24000/kHz
1.705 - 30	30	29.5	30
30 - 88	3	40.0	100
88- 216	3	43.5	150
216- 960	3	46.0	200
Above 960	3	54.0	500

6.3. Test Procedure

Frequency Range 9kHz~30MHz:
The EUT setup on the turn table which has 0.8 m height to the ground. The turn table rotated 360 degrees and antenna fixed to 1 m to find the maximum emission level. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10-2013 regulation.

(1) RBW = 9kHz with peak and average detector.
(2) Detector: average and peak (9kHz-490kHz)
Q.P. (490kHz-30MHz)

Frequency Range 30MHz ~ 1000MHz:
The EUT setup on the turn table which has 0.8 m height to the ground. The turn table rotated 360 degrees and antenna varied from 1 m to 4 m to find the maximum emission level. Both horizontal and vertical polarization are required. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10: 2013 regulation.

Spectrum Analyzer is used for pre-testing with following setting:
(1) RBW = 120KHz
(2) VBW ≥ 3 x RBW.
(3) Detector = Peak.
(4) Sweep time = auto.
(5) Trace mode = max hold.
(6) Allow sweeps to continue until the trace stabilizes.
(7) When peak-detected value is lower than limit that the measurement using the Q.P. detector is not required. Otherwise using Q.P. for finally measurement.

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6.4. Measurement Result Explanation

■Emission Level=Antenna Factor + Cable Loss + Meter Reading

6.5. Test Results

PASSED.

Test Date	2015/11/18	Temp./Hum.	24℃/56%
Test Voltage	DC 19.5V (Via AC Adaptor)		

6.5.1. Frequency Range 9kHz~30MHz

Antenna at 0 Degree

Test Frequency (kHz)	Test Result (dBμV/m at 3m)	Limits (dBμV/m at 3m)	Margin (dB)	Detector
130.400	75.80	105.29	29.490	Peak
391.200	47.20	95.75	48.550	Peak
652.000	45.90	71.31	25.410	Peak
912.800	40.00	68.39	28.390	Peak

Antenna at 90 Degree

Test Frequency (kHz)	Test Result (dBμV/m at 3m)	Limits (dBμV/m at 3m)	Margin (dB)	Detector
130.400	64.20	105.29	41.090	Peak
391.200	36.40	95.75	59.350	Peak
652.000	47.20	71.31	24.110	Peak
912.800	38.20	68.39	30.190	Peak

Note: All emissions are lower than the ambient level cannot be measured.

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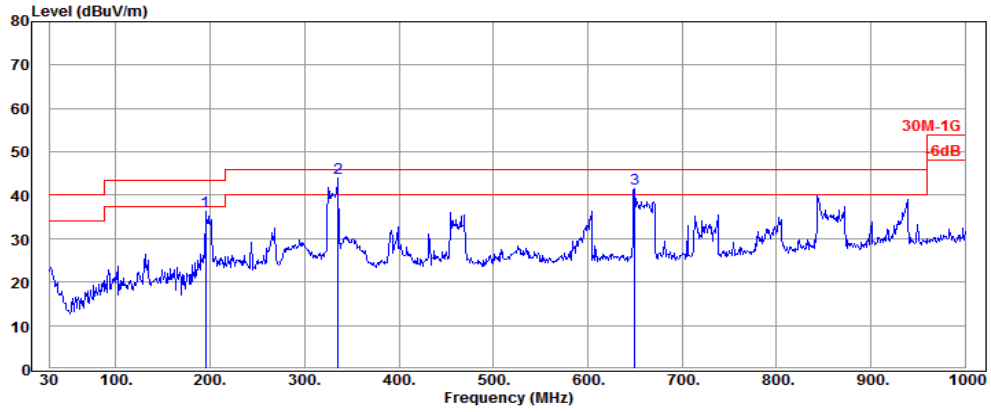
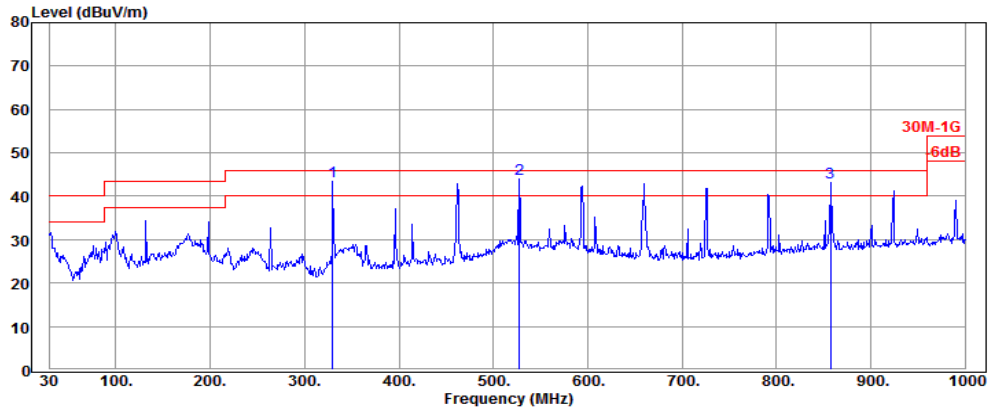
6.5.2. Frequency Range 30MHz ~ 1000MHz

Antenna at Horizontal Polarization



Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
194.90	9.24	3.94	22.99	36.17	43.50	7.33	Peak
335.55	14.08	5.05	24.90	44.03	46.00	1.97	Peak
649.83	18.53	6.61	16.28	41.42	46.00	4.58	Peak

Antenna at Vertical Polarization



Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
329.73	13.93	4.99	24.55	43.47	46.00	2.53	Peak
527.61	17.37	6.46	20.10	43.93	46.00	2.07	Peak
857.41	20.35	7.38	15.56	43.29	46.00	2.71	Peak

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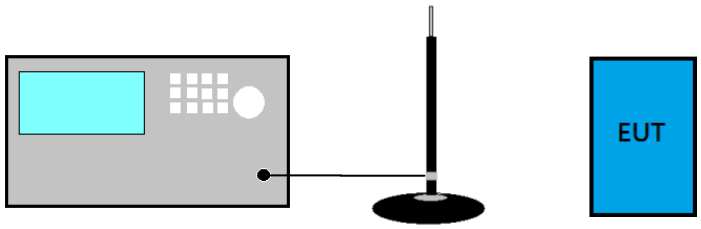
7. EMISSION BANDWIDTH MEASUREMENT

7.1. Block Diagram of Test Setup



7.2. Specification Limits

The 99% bandwidth shall be no wider than 0.25% of the center frequency for device operating between 70MHz and 900MHz. For devices operating above 900MHz, the emission shall be no wider than 0.5% of the centre frequency.

7.3. Test Procedure

(1) Set RBW close to 1-5 % of OBW.
(2) Set VBW≥RBW.
(3) Detector = Peak.
(4) Trace mode = max hold.
(5) Sweep = auto couple.
(6) Allow the trace to stabilize.
(7) Setting channel bandwidth function x % to 99% to record the final bandwidth.

7.4. Test Results

Test Date	2015/12/01	Temp./Hum.	25℃/45%
Test Voltage	DC 19.5V (Via AC Adaptor)	Frequency	130.4MHz

7.4.1. Emission Bandwidth Measurement Results

Center Frequency (MHz)	Occupied Bandwidth (MHz)	Tolerance (%)	Limit (%)
130.4	0.000021	0.000	0.25

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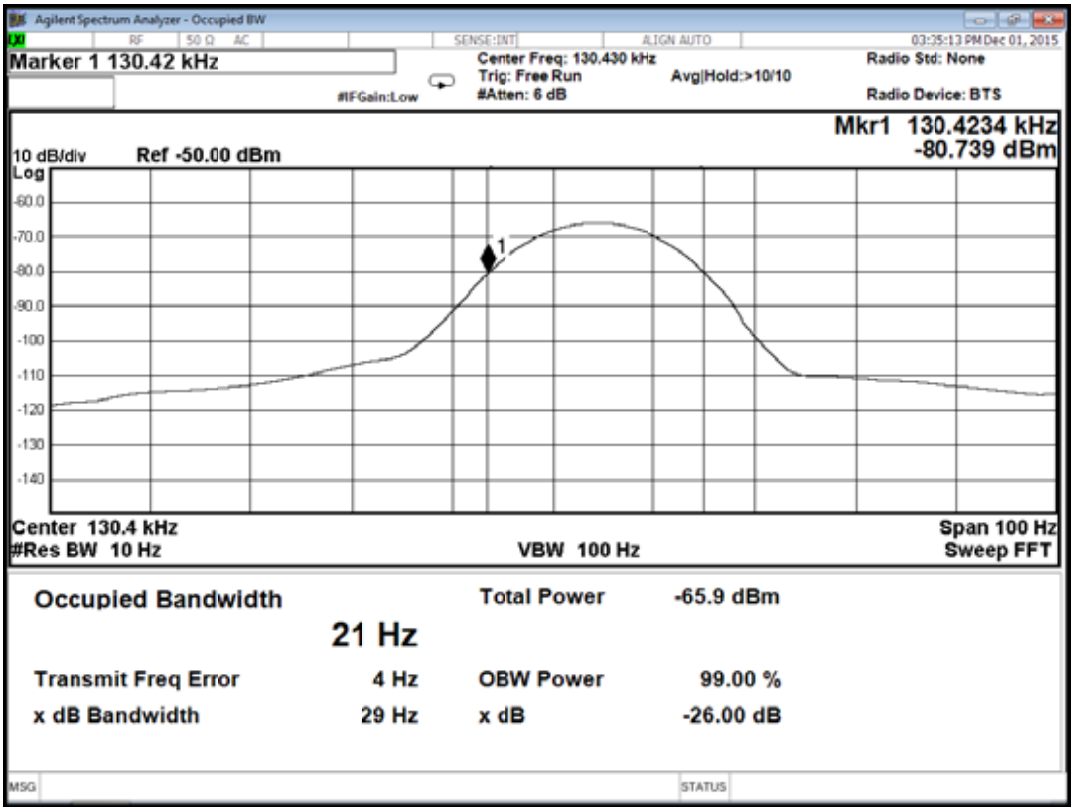
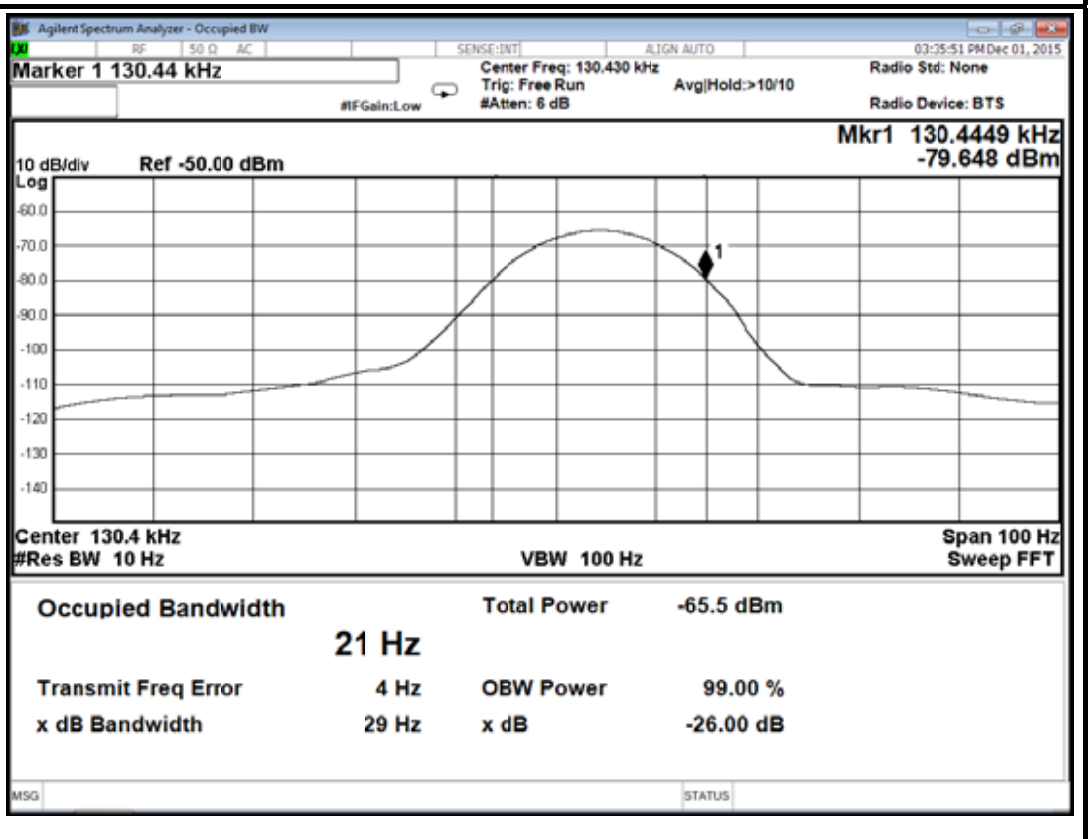
7.4.2. Graph of Bandwidth Measurement





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8. DEVIATION TO TEST SPECIFICATIONS

【NONE】