

Test Mode:

Transmitting mode with modulation

Test Procedure:

1. The testing follows the guidelines in Spurious Radiated Emissions of FCC Public Notice DA 00-705 Measurement Guidelines.
2. For the radiated emission test below 1GHz:
The EUT was placed on a turntable with 0.8 meter above ground. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high PASS filter are used for the test in order to get better signal level.
For the radiated emission test above 1GHz:
Place the measurement antenna on a turntable with 1.5 meter above ground, which is away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Use the following spectrum analyzer settings:

	<p>(1) Span shall wide enough to fully capture the emission being measured;</p> <p>(2) Set RBW=100 kHz for $f < 1$ GHz, RBW=1MHz for $f > 1$GHz ; VBW\geqRBW; Sweep = auto; Detector function = peak; Trace = max hold for peak</p> <p>(3) Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level</p>
Test results:	PASS



6.7.2. Test Instruments

Radiated Emission Test Site (966)				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
ESPI Test Receiver	ROHDE&SCHW ARZ	ESVD	100008	Sep. 11, 2016
Spectrum Analyzer	ROHDE&SCHW ARZ	FSEM	848597/001	Sep. 11, 2016
Spectrum Analyzer	Agilent	N9020A	MY49100060	Sep. 12, 2016
Audio Signal Generator	HP	8920B	3104A03367	Sep. 12, 2016
Pre-amplifier	EM Electronics Corporation CO.,LTD	EM30265	07032613	Sep. 11, 2016
Pre-amplifier	HP	8447D	2727A05017	Sep. 11, 2016
Loop antenna	ZHINAN	ZN30900A	12024	Sep. 13, 2016
Broadband Antenna	Schwarzbeck	VULB9163	340	Sep. 13, 2016
Horn Antenna	Schwarzbeck	BBHA 9120D	631	Sep. 13, 2016
Horn Antenna	Schwarzbeck	BBHA 9170	373	Sep. 13, 2016
Antenna Mast	CCS	CC-A-4M	N/A	N/A
Coax cable	TCT	RE-low-01	N/A	Sep. 11, 2016
Coax cable	TCT	RE-high-02	N/A	Sep. 11, 2016
Coax cable	TCT	RE-low-03	N/A	Sep. 11, 2016
Coax cable	TCT	RE-high-04	N/A	Sep. 11, 2016
EMI Test Software	Shurple Technology	EZ-EMC	N/A	N/A

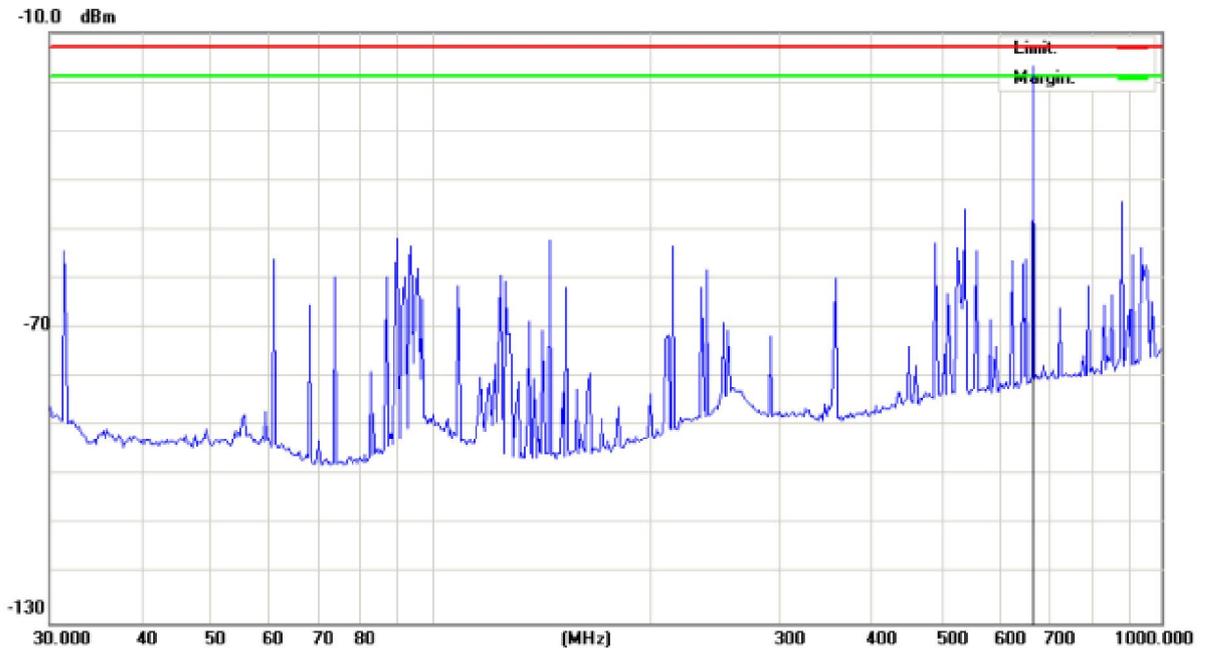
Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

6.7.3. Test Data

Please refer to following diagram for individual

Below 1GHz

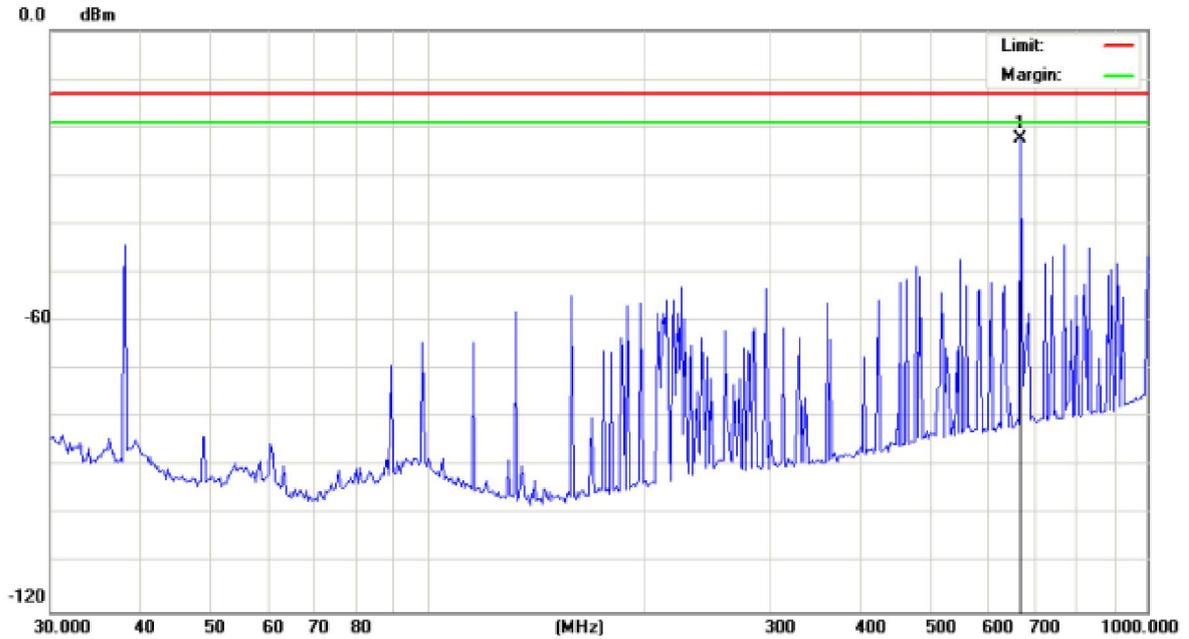
Horizontal:



Site Polarization: *Horizontal* Temperature: 25
 Limit: part 74.861 spurious emission <1G Power: Humidity: 54 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree
		MHz	dBm	dB	dBm	dBm	dB	cm	degree
1	*	667.2418	-16.32	-0.54	-16.86	-13.0	-3.86	peak	0

Vertical:



Site	Polarization: Vertical	Temperature: 25
Limit: part 74.861 spurious emission <1G	Power:	Humidity: 54 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	cm	degree	Comment
1	*	667.2418	-21.84	-0.54	-22.38	-13.0	-9.38	peak	0	

Note: 1. The low frequency, which started from 9KHz~30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported
 2. Measurements were conducted in all three channel (Low, Middle, High) and two power level(maximum, minimum), and the worst case(maximum power level, middle channel) was submitted only.

Above 1GHz

Low channel: 640MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBm)	Correction Factor (dB)	Peak (dBm)	Peak limit (dBm)	Margin (dB)
1280	H	-9.46	-11.78	-21.24	-13	-8.24
2560	H	-36.06	-7.57	-43.63	-13	-30.63
5120	H	-39.08	1.73	-37.35	-13	-24.35
---	H	---	---	---	---	---
1280	V	-9.35	-11.78	-21.13	-13	-8.13
2560	V	-36.05	-7.57	-43.62	-13	-30.62
5120	V	-38.98	1.73	-37.25	-13	-24.25
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Middle channel: 665MHz

Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	Correction Factor (dB)	Peak (dBμV/m)	Peak limit (dBμV/m)	Margin (dB)
1330	H	-9.64	-11.69	-21.33	-13	-8.33
2660	H	-35.02	-7.26	-42.28	-13	-29.28
---	H	---	---	---	---	---
---	H	---	---	---	---	---
1330	V	-9.25	-11.69	-20.94	-13	-7.94
2660	V	-35.15	-7.26	-42.41	-13	-29.41
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High channel: 689.75MHz

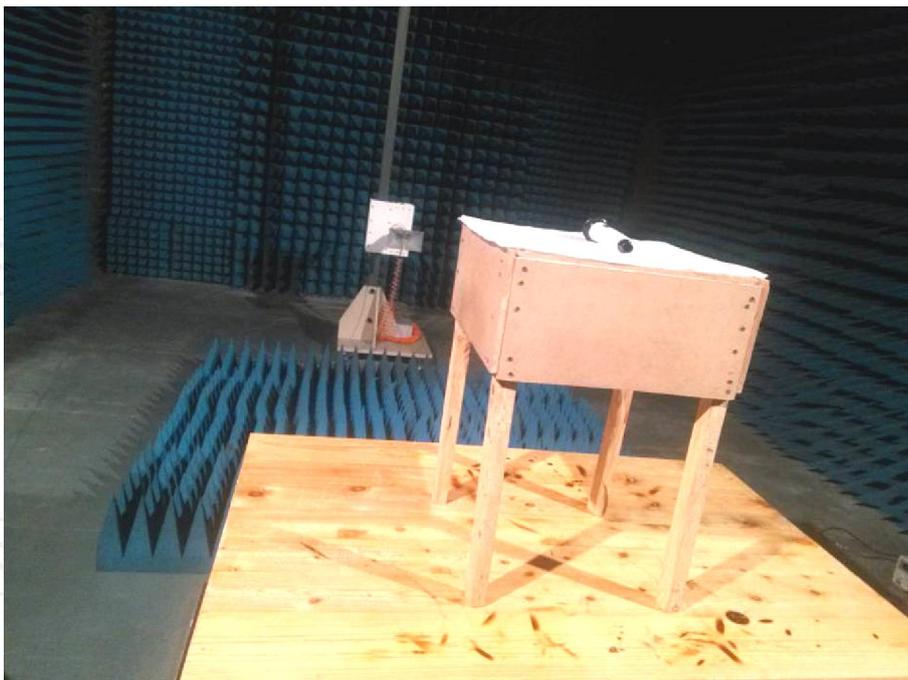
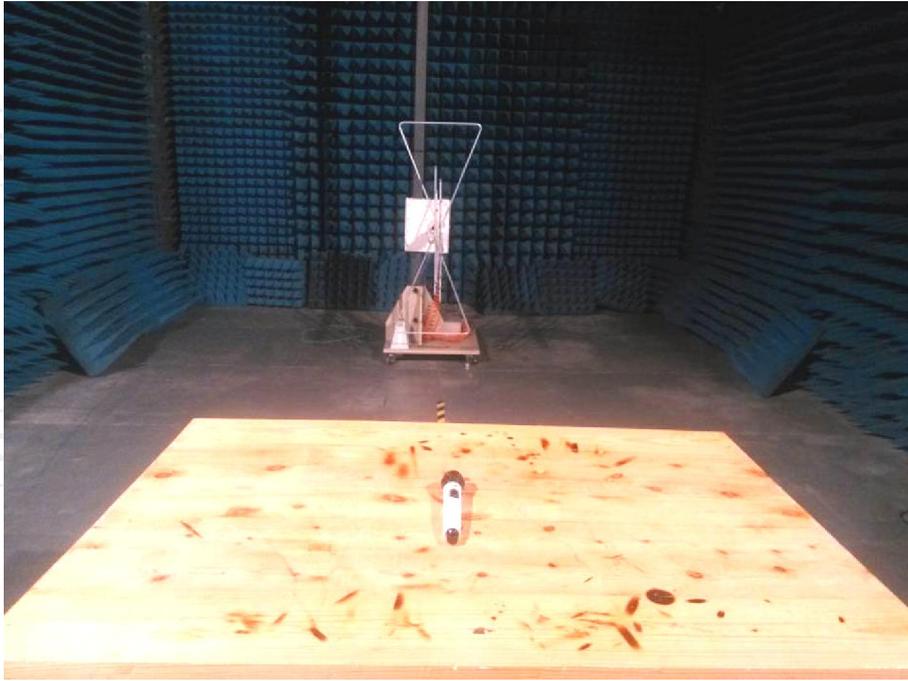
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBμV)	Correction Factor (dB)	Peak (dBμV/m)	Peak limit (dBμV/m)	Margin (dB)
1379.5	H	-9.68	-11.6	-21.28	-13	-8.28
2759	H	-35.49	-6.95	-42.44	-13	-29.44
5518	H	-38.26	2.49	-35.77	-13	-22.77
---	H	---	---	---	---	---
1379.5	V	-9.01	-11.6	-20.61	-13	-7.61
2759	V	-35.15	-6.95	-42.10	-13	-29.10
5518	V	-39.91	2.49	-37.42	-13	-24.42
---	V	---	---	---	---	---

Note:

1. The low frequency, which started from 9KHz~30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported
2. Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss – Pre-amplifier
3. Margin (dB) = Emission Level (Peak) (dBμV/m)-Average limit (dBμV/m)
4. The emission levels of other frequencies are very lower than the limit and not show in test report.
5. Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency.
6. Data of measurement shown “---“in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.
7. Measurements were conducted in all three channel (Low, Middle, High) and two power level (maximum, minimum), and the worst case was submitted only.

7. Photograph of Setup

Radiated Emission

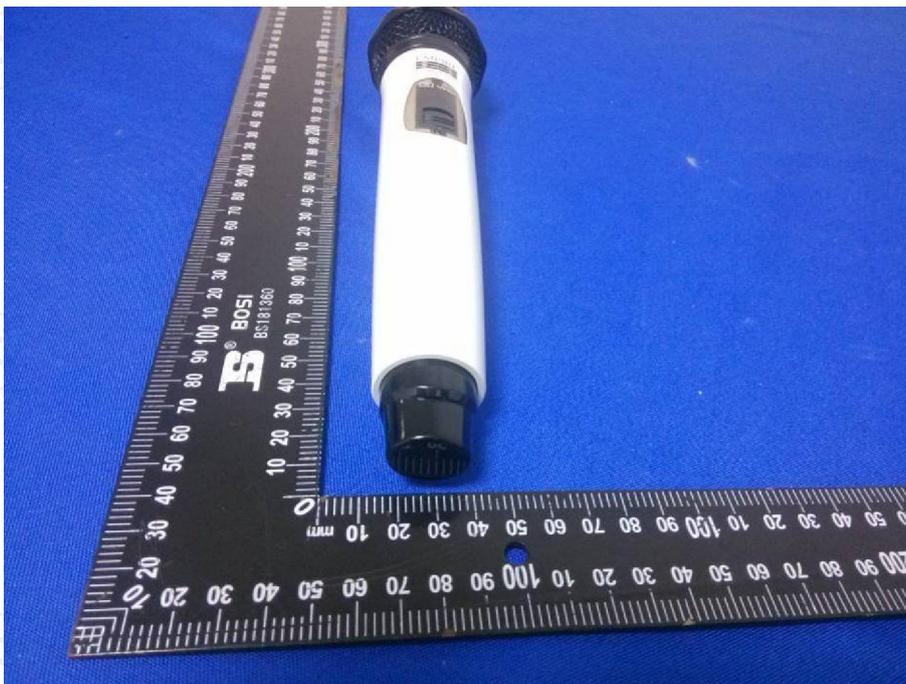


8. Photograph of EUT

External Photos



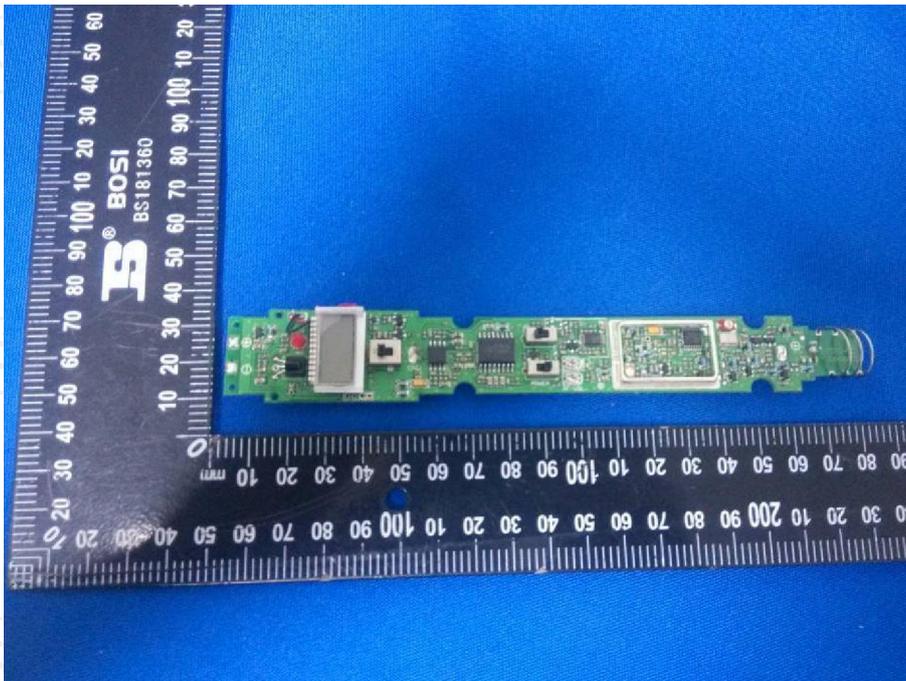
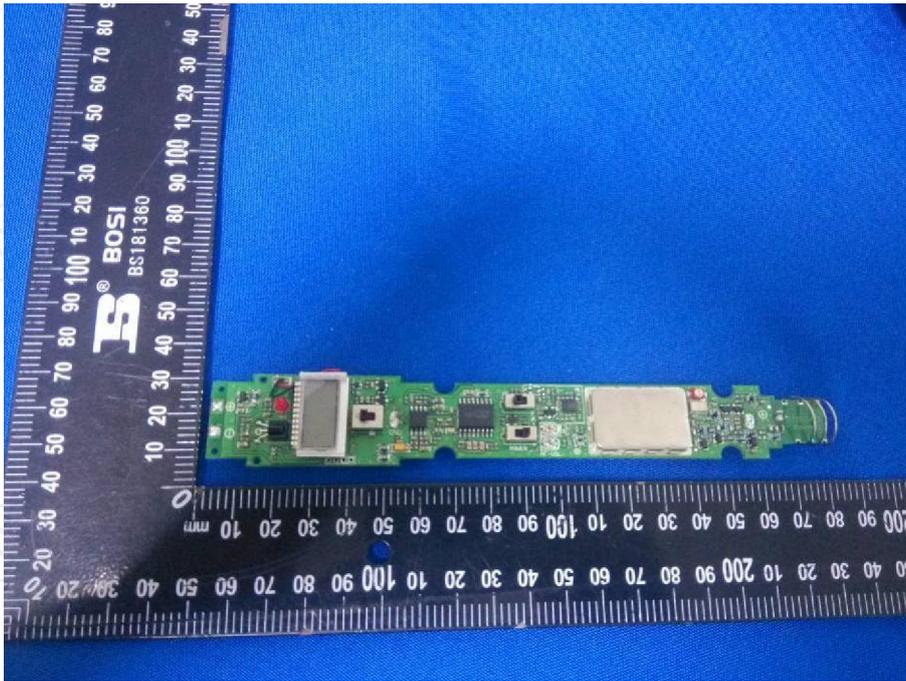






Internal Photos







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