

# **TEST REPORT**

FCC ID: 2AKIN-CNMD0016

**Product: CINEMOOD STORYTELLER** 

Model No.: CNMD0016

**Additional Model: CNMD0016XX** 

Trade Mark: CINEMOOD

Report No.: TCT161201E044 Issued Date: Dec. 29, 2016

Issued for:

CINEMOOD Trendsetters co.
2711 Centerville Road, Suite 400, Wilmington, New Castle County, Delaware
19808, US

Issued By:

Shenzhen Tongce Testing Lab.

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## 1. Test Certification

Product:	CINEMOOD STORYTELLER
Model No.:	CNMD0016
Additional Model No.:	CNMD0016XX
Applicant:	CINEMOOD Trendsetters co.
Address:	2711 Centerville Road, Suite 400, Wilmington, New Castle County, Delaware 19808, US
Manufacturer:	Jiuzhou Group(Hong Kong)Holdings Limited
Address:	Jinzhou Industrial Park, Gongming, Guangming New District, Shenzhen
Date of Test:	Dec. 02 – Dec. 27, 2016
Applicable Standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.225

The above equipment has been tested by Shenzhen Tongce Testing Lab. 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.

Tested By:

Jin Wang

Reviewed By:

Date: Dec. 28, 2016

Date: Dec. 28, 2016

Approved By: Date: Dec. 28, 2016

**Tomsin** 



# 2. Test Result Summary

Requirement	CFR 47 Section IC Paragraph	Result
Antenna requirement	§15.203	PASS
AC Power Line Conducted Emission	§15.207	PASS
Spurious emissions	§15.225/ §15.209 §2.1053, §2.1057	PASS
Occupied Bandwidth	§15.215 (c) §2.1049	PASS
Frequency stability	§15.225 §2.1055	PASS

#### Note:

- 1. PASS: Test item meets the requirement.
- 2. Fail: Test item does not meet the requirement.
- 3. N/A: Test case does not apply to the test object.
- 4. The test result judgment is decided by the limit of test standard.





# 3. EUT Description

Product Name:	CINEMOOD STORYTELLER
Model :	CNMD0016
Additional Model:	CNMD0016XX: XX – It's regional code like US/RU/EU, etc.
Trade Mark:	CINEMOOD
Operation Frequency:	13.56MHz
Modulation Technology:	ASK
Antenna Type:	Internal Antenna
Antenna Gain:	0dBi
Power Supply:	DC 3.7V from rechargeable lithium battery Adapter Information: Model: CNMD1601 Input: 100-240V AC, 50/60Hz, 0.6A Max Output: DC 5V, 2A
Remark:	All models above are identical in interior structure, electrical circuits and components, and just model names are different for the marketing requirement.





## 4. Genera Information

## 4.1. Test Environment and Mode

Operating Environment:	
Temperature:	24.0 °C
Humidity:	54 % RH
Atmospheric Pressure:	1010 mbar
Test Mode:	
Operation mode:	Keep the EUT in continuous transmitting with modulation

The sample was placed (0.8m below 1GHz, 1.5m above 1GHz) above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

## 4.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Equipment	Model No.	Serial No.	FCC ID	Trade Name	
E	1 (3)	1	(3)1		

#### Note:

- 1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
- Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

## 5. Facilities and Accreditations

#### 5.1. Facilities

The test facility is recognized, certified, or accredited by the following organizations:

- FCC Registration No.: 572331
  - Shenzhen Tongce Testing Lab

The 3m Semi-anechoic chamber has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

- IC Registration No.: 10668A-1
  - The 3m Semi-anechoic chamber of Shenzhen TCT Testing Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing
- CNAS Registration No.: CNAS L6165
   Shenzhen TCT Testing Technology Co., Ltd. is accredited to ISO/IEC 17025:2005
   General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6165.

#### 5.2. Location

Shenzhen TCT Testing Technology Co., Ltd.

Address: 1F, Building 1, Yibaolai Industrial Par Qiaotou Village, Fuyong Town Shenzhen, China

## 5.3. Measurement Uncertainty

The reported uncertainty of measurement  $y \pm U$ , where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

No.	Item	MU
1	Conducted Emission	±2.56dB
2	RF power, conducted	±0.12dB
3	Spurious emissions, conducted	±0.11dB
4	All emissions, radiated(<1G)	±3.92dB
5	All emissions, radiated(>1G)	±4.28dB
6	Temperature	±0.1°C
7	Humidity	±1.0%





## 6. Test Results and Measurement Data

## 6.1. Antenna Requirement

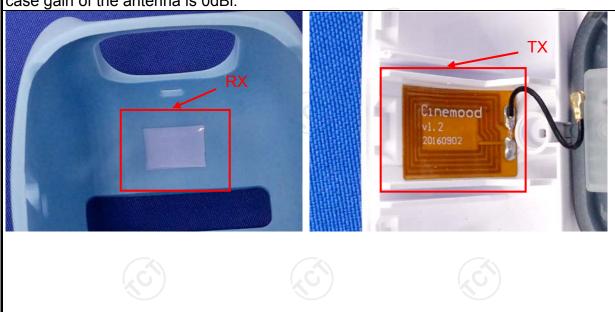
**Standard requirement:** FCC Part15 C Section 15.203

15.203 requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

## E.U.T Antenna:

The NFC antennas are internal antennas which permanently attached, and the best case gain of the antenna is 0dBi.





## 6.2. Conducted Emission

## 6.2.1. Test Specification

Test Requirement:	FCC Part15 C Section	15.207								
Test Method:	ANSI C63.10:2013	(0)								
Frequency Range:	150 kHz to 30 MHz									
Receiver setup:	RBW=9 kHz, VBW=30 kHz, Sweep time=auto									
Limits:	Frequency range (MHz) 0.15-0.5 0.5-5 5-30	Limit (c Quasi-peak 66 to 56* 56 60	BuV) Average 56 to 46* 46 50							
Test Setup:	LISN 40	E.U.T  plane  EMI Receive	SN AC power							
Test Mode:	Refer to section 4.1 for	details								
Test Procedure:	impedance stabilizate 50ohm/50uH coupl equipment.  2. The peripheral device through a LISN through a LISN through a beautiful for the test set of the test set	tion network (L.I. ling impedance es are also conne at provides a nm termination. (Fetup and photogrape are checked for to find the management and all according to A	ected to the main power 50ohm/50uH coupling Please refer to the block							
Test Result:	PASS									



## 6.2.2. Test Instruments

Conducted Emission Shielding Room Test Site (843)											
Equipment	Manufacturer	Model	Serial Number	Calibration Due							
EMI Test Receiver	R&S	ESCS30	100139	Aug. 11, 2017							
LISN	Schwarzbeck	NSLK 8126	8126453	Aug. 16, 2017							
Coax cable (9kHz-40GHz)	ТСТ	CE-05	N/A	Aug. 11, 2017							
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).

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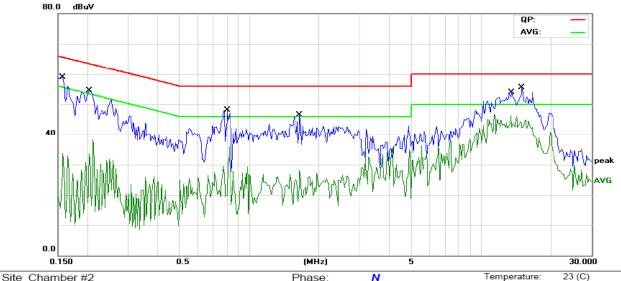
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#### 6.2.3. Test data

## Please refer to following diagram for individual

## Conducted Emission on Line Terminal of the power line (150 kHz to 30MHz)



Limit: FCC Part 15B Class B Conduction(QP)

Phase: N Power:

Humidity:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBu∨	dB	Detector	Comment
1		0.1578	41.29	11.49	52.78	65.57	-12.79	QP	
2		0.1578	21.49	11.49	32.98	55.57	-22.59	AVG	
3		0.2047	37.63	11.47	49.10	63.41	-14.31	QP	
4		0.2047	18.32	11.47	29.79	53.41	-23.62	AVG	
5	*	0.8063	33.16	11.23	44.39	56.00	-11.61	QP	
6		0.8063	15.63	11.23	26.86	46.00	-19.14	AVG	
7		1.6578	26.40	11.53	37.93	56.00	-18.07	QP	
8		1.6578	7.65	11.53	19.18	46.00	-26.82	AVG	
9		13.5625	32.78	11.57	44.35	60.00	-15.65	QP	
10		13.5625	24.25	11.57	35.82	50.00	-14.18	AVG	
11		15.0391	34.52	11.70	46.22	60.00	-13.78	QP	
12		15.0391	24.94	11.70	36.64	50.00	-13.36	AVG	

#### Note:

Freq. = Emission frequency in MHz

Reading level  $(dB\mu V)$  = Receiver reading

Corr. Factor (dB) = Antenna factor + Cable loss

Measurement ( $dB\mu V$ ) = Reading level ( $dB\mu V$ ) + Corr. Factor (dB)

 $Limit (dB\mu V) = Limit stated in standard$ 

 $Margin (dB) = Measurement (dB\mu V) - Limits (dB\mu V)$ 

Q.P. =Quasi-Peak

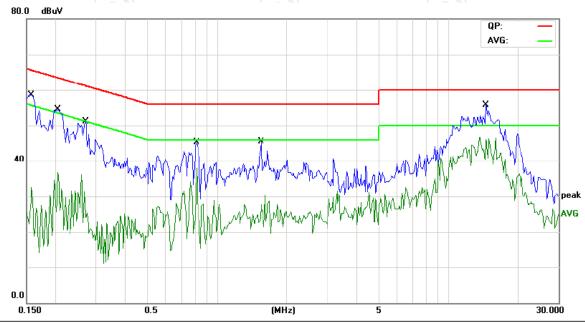
AVG =average

<sup>\*</sup> is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz





## Conducted Emission on Neutral Terminal of the power line (150 kHz to 30MHz)



Site Chamber #2 Phase: L1 Temperature: 23 (C)
Limit: FCC Part 15B Class B Conduction(QP) Power: Humidity: 54 %

N	lo.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
			MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
	1	*	0.1578	43.45	11.49	54.94	65.57	-10.63	QP	
	2		0.1578	21.99	11.49	33.48	55.57	-22.09	AVG	
	3		0.2047	38.07	11.47	49.54	63.41	-13.87	QP	
	4		0.2047	18.97	11.47	30.44	53.41	-22.97	AVG	
	5		0.2711	34.57	11.43	46.00	61.08	-15.08	QP	
	6		0.2711	12.68	11.43	24.11	51.08	-26.97	AVG	
	7		0.8141	29.97	11.22	41.19	56.00	-14.81	QP	
	8		0.8141	22.93	11.22	34.15	46.00	-11.85	AVG	
	9		1.5484	24.80	11.48	36.28	56.00	-19.72	QP	
1	0		1.5484	7.18	11.48	18.66	46.00	-27.34	AVG	
1	1		14.5742	34.55	11.67	46.22	60.00	-13.78	QP	
	2		14.5742	24.04	11.67	35.71	50.00	-14.29	AVG	

#### Note:

Freq. = Emission frequency in MHz

Reading level  $(dB\mu V)$  = Receiver reading

Corr. Factor (dB) = Antenna factor + Cable loss

Measurement ( $dB\mu V$ ) = Reading level ( $dB\mu V$ ) + Corr. Factor (dB)

 $Limit (dB\mu V) = Limit stated in standard$ 

 $Margin (dB) = Measurement (dB\mu V) - Limits (dB\mu V)$ 

Q.P. =Quasi-Peak

AVG =average

<sup>\*</sup> is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz



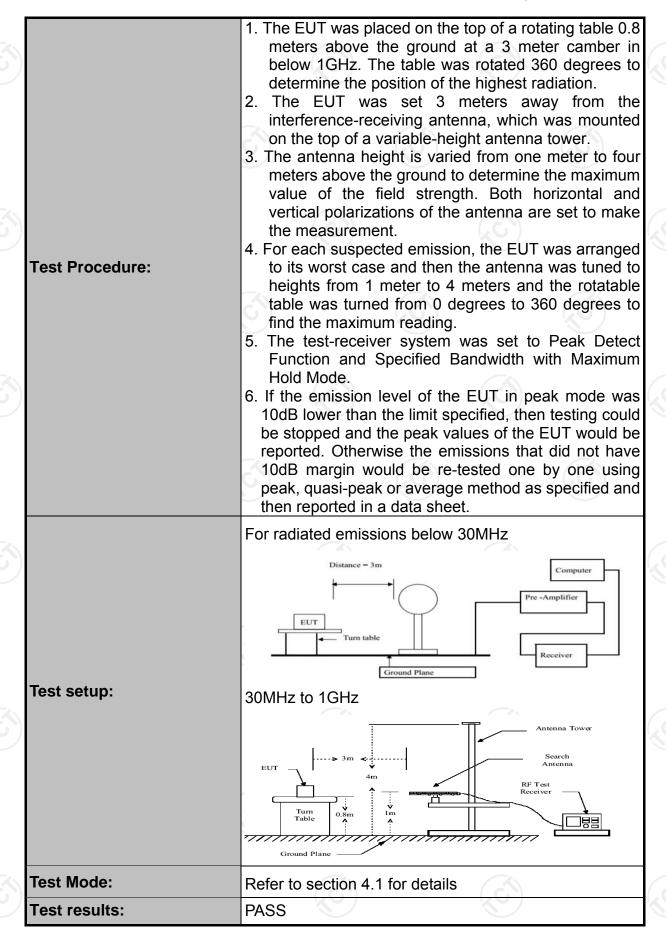
## 6.3. Radiated Emission Measurement

## 6.3.1. Test Specification

Test Requirement:	FCC Part15	C Section	15.22	25		
Test Method:	ANSI C63.10	): 2013				
Frequency Range:	9 kHz to 100	0 MHz				
Measurement Distance:	3 m					
Antenna Polarization:	Horizontal &	Vertical				
	Frequency	Detector	RE	3W	VBW	Remark
Receiver Setup:	9kHz- 150kHz 150kHz-	Quasi-peal Quasi-peal			1kHz 30kHz	Quasi-peak Value Quasi-peak Value
	30MHz 30MHz-1GHz	Quasi-peal	( 100	kHz	300kHz	Quasi-peak Value
	FCC Part15				000KH12	Quasi peak value
	Frequer (MHz)	псу	Lim (uV/ @30	iit m	Limit (dBuV/n @3m)	n Detector
	13.110-13		100		80.5	QP
	13.410-13		334		90.5	QP
	13.553-13		15848 224		124.0	QP
		13.567-13.7110 13.710-14.010			90.5 80.5	QP QP
	Frequency Rar (MHz)		Distance (m) F		d strength B µ V/m)	Detector
	0.009-0.490	3	3		og 2400/F Hz) + 80	QP
Limit:	0.490-1.705	3		20log 24000/F (kHz) + 40		QP
	1.705-30	3	2010		og 30 + 40	QP
	30-88	3	3		40.0	40.0
	88-216	3	3	43.5		43.5
	216-960	3) 3	3		46.0	46.0
	Above 960	3	3		54.0	54.0
	2. In the Ab 3. Distance instrument 4. The radia (Lying, S worse rad 5. If measu	refers to the antenna and ated emission ide, and Stadiated emiss rement is ma	he tighte e distand I the EU ns shou nd), Afte ion was ade at 31	er limit ce in n T Id be er pre- get a m dista	applies at a neters betw tested unde test. It was t the lying p ance, then I	the band edges. een the measuring er 3-axes position found that the position. F.S Limitation at 3m

distance is adjusted by using the formula Ld1 = Ld2 \* (d2/d1)









### 6.3.2. Test Instruments

	Radiated Emission Test Site (966)						
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due			
ESPI Test Receiver	ROHDE&SCHW ARZ	ESVD	100008	Aug. 11, 2017			
Spectrum Analyzer	ROHDE&SCHW ARZ	FSEM	848597/001	Aug. 11, 2017			
Pre-amplifier	EM Electronics Corporation CO.,LTD	EM30265	07032613	Aug. 11, 2017			
Pre-amplifier	HP	8447D	2727A05017	Aug. 11, 2017			
Loop antenna	ZHINAN	ZN30900A	12024	Aug. 13, 2017			
Broadband Antenna	Schwarzbeck	VULB9163	340	Aug. 13, 2017			
Horn Antenna	Schwarzbeck	BBHA 9120D	631	Aug. 13, 2017			
Coax cable (9kHz-40GHz)	тст	N/A	N/A	Aug. 12, 2017			
Coax cable (9kHz-40GHz)	тст	N/A	N/A	Aug. 12, 2017			
Coax cable (9kHz-40GHz)	тст	N/A	N/A	Aug. 12, 2017			
Coax cable (9kHz-40GHz)	тст	N/A	N/A	Aug. 12, 2017			
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).

### 6.3.3. Test Data

## Field Strength of Fundamental

Frequency	Emission	Limits	Margin
(MHz)	(dBuV/m)	(dBuV/m)	(dB)
13.56	75.63	124	48.37



## **Spurious Emissions**

Frequency (MHz)	Emission Level (dBuV/m)	Horizontal /Vertical	Limit Line (dBuV/m)	Detector	Margin (dB)
5.38	26.44	V	69.54	QP	-43.10
27.12	25.65	V	69.54	QP	-43.89
40.68	28.39	Н	40.00	QP	-11.61
40.68	35.32	V	40.00	QP	-4.68
54.24	32.32	(HC)	40.00	QP	-7.68
54.24	29.43	V	40.00	QP	-10.57

Note: 1) QP= Quasi-peak

2) Emission Level = Reading Level + Antenna Factor + Cable Loss.



## 6.4. Occupied Bandwidth

## 6.4.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.215(c)			
Test Method:	ANSI C63.10: 2013			
Limit:	N/A			
Test Procedure:	<ol> <li>According to the follow Test-setup, keep the relative position between the artificial antenna and the EUT.</li> <li>Set to the maximum power setting and enable the EUT transmit continuously.</li> <li>Use the following spectrum analyzer settings for 20dB Bandwidth measurement.         Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel; RBW≥ 1% of the 20 dB bandwidth; VBW≥RBW; Sweep = auto; Detector function = peak; Trace = max hold.     </li> <li>Measure and record the results in the test report.</li> </ol>			
Test setup:	Spectrum Analyzer EUT			
Test Mode:	Refer to section 4.1 for details			
Test results:	PASS			

### 6.4.2. Test Instruments

RF Test Room					
Equipment Manufacturer Model Serial Number Calibration					
Spectrum Analyzer	R&S	FSU	200054	Aug. 11, 2017	

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

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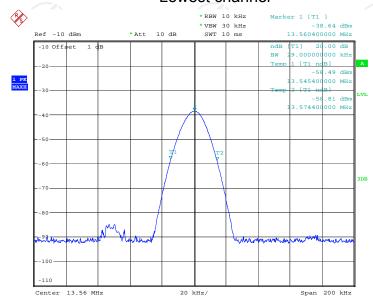


### 6.4.3. Test data

Frequency(MHz) 20dB Occupy Bandwidth (kHz)		Limit (kHz)	Conclusion	
	13.56	29		PASS

#### Test plots as follows:

### Lowest channel



Date: 6.JAN.2017 15:32:50





# 6.5. Frequency stability

## 6.5.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.225			
Test Method:	ANSI C63.10 : 2013			
Operation mode:	Refer to item 4.1			
Limit:	+/-0.01%			
Test Setup:	Spectrum Analyzer EUT			
	Thermal Chamber			
Test Procedure:	<ol> <li>The equipment under test was connected to an external DC power supply and input rated voltage.</li> <li>RF output was connected to a spectrum analyzer.</li> <li>The EUT was placed inside the temperature chamber.</li> <li>Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°C operating frequency as reference frequency.</li> <li>Turn EUT off and set the chamber temperature to -20°C. After the temperature stabilized for approximately 30 minutes recorded the frequency.</li> <li>Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.</li> </ol>			
Test Result:	PASS			

## 6.5.2. Test Instruments

RF Test Room						
Equipment Manufacturer Model Serial Number Calibration Du						
Spectrum Analyzer	R&S	FSU	200054	Aug. 11, 2017		
DC Power	GW	GPR-6030 D	1 6	Aug. 13, 2016		

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# 6.5.3. Test Data

\	√oltage	Temperature	Frequency	Deviation	Limit
	(Vdc)	(℃)	(MHz)	(%)	(%)
	3.7	-20	13.560333	0.0025	
	3.7	-10	13.560288	0.0021	
(	3.7	0	13.560132	0.0010	(C)
	3.7	10	13.56023	0.0017	
	3.7	20	13.560159	0.0012	+/-0.01
	3.7	30	13.560286	0.0021	<del>+</del> /-0.01
	3.7	40	13.560201	0.0015	
	3.7	50	13.560208	0.0015	/
	4.25	20	13.560165	0.0012	
	3.50	20	13.560159	0.0026	
	3.7 4.25	50 20	13.560208 13.560165	0.0015 0.0012	



# Appendix A: Photographs of Test Setup Product: CINEMOOD STORYTELLER

Product: CINEMOOD STORYTELLER
Model: CNMD0016
Radiated Emission









# **Appendix B: Photographs of EUT**

Refer to test report TCT161201E043

## \*\*\*\*END OF REPORT\*\*\*\*

