



FCC 47 CFR PART 15 SUBPART B

TEST REPORT

For

Applicant : Chung Hing Industry Co., Ltd.

**Address : Block A-B,1/F, Shing King Industrial Building, 45
Kut Shing Street, Chai Wan, Hong Kong.**

Product Name : Wireless Bright Dim Remote Control Receiver

Model Name : DLR-110-BD-01

Brand Name : N/A

FCC ID : WD4DLR-110-BD-01

Report No. : SZSTS080603F1

Date of Issue : July.04, 2008

Issued by : Shenzhen Super Test Service Technology Co., Ltd.

**Address : No. 813 Unit A, HuaMeiJu Business Center, Xinhua Road,
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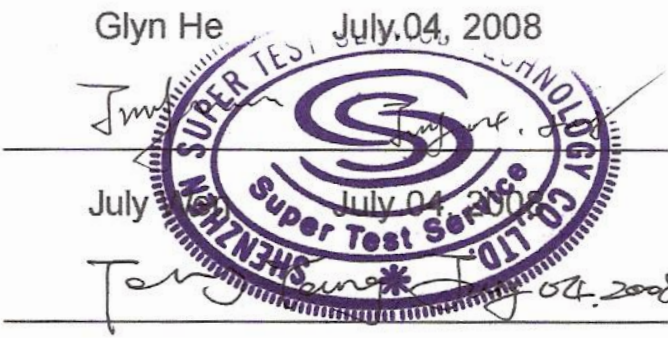
1. VERIFICATION OF CONFORMITY

Equipment Under Test: Wireless Bright Dim Remote Control Receiver
Brand Name: N/A
Model Number: DLR-110-BD-01
FCC ID: WD4DLR-110-BD-01
Applicant: Chung Hing Industry Co., Ltd.
Block A-B,1/F, Shing King Industrial Building, 45 Kut Shing
Street, Chai Wan, Hong Kong.
Manufacturer: Sun Hing Industry Company
8-10Zhenxing Road, 388 Industrial, Liang An Tian, Ping Hu, Long Gang,
Shenzhen, Guangdong, China
Technical Standards: FCC Part 15 B
File Number: SZSTS080603F1
Date of test: Jun.18~July.04, 2008
Deviation: None
Condition of Test Sample: Normal

The above equipment was tested by Shenzhen Super Test Service Technology Co., Ltd. for compliance with the requirements set forth in FCC Part 15 and the Technical Standards mentioned above. This said equipment in the configuration described in this report shows the maximum emission levels emanating from equipment and the level of the immunity endurance of the equipment are within the compliance requirements.

The test results of this report relate only to the tested sample identified in this report.

Tested By Glyn He July.04.2008
Glyn He July.04, 2008
Checked By [Signature]
July 04, 2008
Authorized By [Signature]
Terry Yang July.04, 2008



2. GENERAL INFORMATION

2.1 Product Information

Housing Type:	Plastic
EUT Rating Voltage:	AC 120V/60Hz
Voltage During Test:	AC 120V/60Hz
I/O Type of EUT:	AC Input/AC Output
I/O Q'TY:	1/1
Model Number:	DLR-110-BD-01
Series Number:	N/A
Description of Differences:	N/A

NOTE:

1. *Please refer to Appendix I for the photographs of the EUT. For a more detailed features description about the EUT, please refer to User's Manual.*

2.2 Objective

Perform FCC Part 15 Subpart B tests for FCC Marking.

2.3 Test Standards and Results

Test items and the results are as bellow:

EMISSION			
Standard	Item	Result	Remarks
FCC 47 CFR Part 15 Subpart B, ANSI C63.4-2003	Conducted	PASS	Meet Class B limit
	Radiated	PASS	Meet Class B limit

Note: 1. The test result judgment is decided by the limit of measurement standard
2. The information of measurement uncertainty is available upon the customer's request.

2.4 Environmental Conditions

During the measurement the environmental conditions were within the listed ranges:

- Temperature: 15-35°C
- Humidity: 30-60 %
- Atmospheric pressure: 86-106 kPa

2.5 Measurement Uncertainty

The uncertainty is calculated using the methods suggested in the “Guide to the Expression of Uncertainty in Measurement” (GUM) published by ISO.

- Uncertainty of Conducted Emission, $U_c = \pm 1.8\text{dB}$
- Uncertainty of Radiated Emission, $U_c = \pm 3.2\text{dB}$

3. EUT Test Procedure

1. Put EUT on the test table.
2. Power on the EUT.
3. Make sure the EUT operates normally during the test.

4. SUPPORT EQUIPMENT

Device Type	Manufacturer	Model Name	Serial No.	Data Cable	Power Cable
Bulb	N/A	N/A	N/A	N/A	Unshielded 1.0m
	--	--	--	--	--

Note: All the above equipment/cables were placed in worse case positions to maximize emission signals during emission test.

Grounding: Grounding was in accordance with the manufacturer's requirements and conditions for the intended use.

5. TEST FACILITY

Test Site:	Bontek Compliance Testing Laboratory Ltd.
Location:	East 5/F Block4, Anhua Industrial Park No.8, Tairan Rd, CheGongMiao, Futian District, ShenZhen
Description:	There is one 3m semi-anechoic an area test sites and two line conducted labs for final test. The Open Area Test Sites and the Line Conducted labs are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4 and CISPR 16 requirements. The FCC Registration Number is 338263 .
Site Filing:	The site description is on file with the Federal Communications Commission, 7435 Oakland Mills Road, Columbia, MD 21046.
Instrument Tolerance:	All measuring equipment is in accord with ANSI C63.4 and CISPR 16 requirements that meet industry regulatory agency and accreditation agency requirement.
Ground Plane:	Two conductive reference ground planes were used during the Line Conducted Emission, one in vertical and the other in horizontal. The dimensions of these ground planes are as below. The vertical ground plane was placed distancing 40 cm to the rear of the wooden test table on where the EUT and the support equipment were placed during test. The horizontal ground plane projected 50 cm beyond the footprint of the EUT system and distanced 80 cm to the wooden test table. For Radiated Emission Test, one horizontal conductive ground plane extended at least 1m beyond the periphery of the EUT and the largest measuring antenna, and covered the entire area between the EUT and the antenna. It has no holes or gaps having longitudinal dimensions larger than one-tenth of a wavelength at the highest frequency of measurement up to 1GHz.

6. TEST EQUIPMENT LIST

Instrumentation: The following list contains equipment used at BCT for testing. The equipment conforms to the CISPR 16-1 / ANSI C63.2 Specifications for Electromagnetic Interference and Field Strength Instrumentation from 10 kHz to 1.0 GHz or above.

No.	Equipment	Manufacturer	Model No.	S/N	Calibrator due date
1	EMI Test Receiver	R&S	ESCI	100687	2009/02/21
2	EMI Test Receiver	R&S	ESPI7	100097	2009/02/21
3	Amplifier	HP	8447D	1937A02492	2009/02/21
4	Single Power Conductor Module	FCC	FCC-LISN-5-50-1-01-CISP R25	07101	2009/02/21
5	TRILOG Broadband Test-Antenna	SCHWARZBECK	VULB9163	9163-324	2009/02/21
6	Horn Antenna	SCHWARZBECK	BBHA9120A	B08000991-0001	2009/02/21
7	High Field Biconical Antenna	ELECTRO-METRICS	EM-6913	166	2009/02/21
8	Log Periodic Antenna	ELECTRO-METRICS	EM-6950	811	2009/02/21
9	Remote Active Vertical Antenna	ELECTRO-METRICS	EM-6892	304	2009/02/21
10	Power Clamp	SCHWARZBECK	MDS-21	3812	2009/02/21
11	Single Power Conductor Module	FCC	FCC-LISN-5-50-1-01-CISP R25	07102	2009/02/21
12	Teo Line Single Phase Module	SCHWARZBECK	NSLK8128	D-69250	2009/02/21
13	Positioning Controller	C&C	CC-C-1F	MF7802113	2009/02/21
14	Electrostatic Discharge Simulator	TESEQ	NSG437	125	2009/02/21
15	Fast Transient Burst Generator	SCHAFFNER	MODULA6150	34572	2009/02/21
16	Fast Transient Noise Simulator	Noiseken	FNS-105AX	31485	2009/02/21
17	Capacitive Coupling Clamp	TESEQ	CDN8014	25096	2009/02/21
18	Color TV Pattern Generator	PHILIPS	PM5418	TM209947	2009/02/21
19	Power Frequency Magnetic Field Generator	EVERFINE	EMS61000-8K	608002	2009/02/21
20	Triple-Loop Antenna	EVERFINE	LLA-2	607004	2009/02/21
21	10dB attenuator	SCHWARZBECK	MTAIMP-136	R65.90.0001#06	2009/02/21

NOTE: Equipments listed above have been calibrated and are in the period of validation.

7. LINE CONDUCTED EMISSION TEST

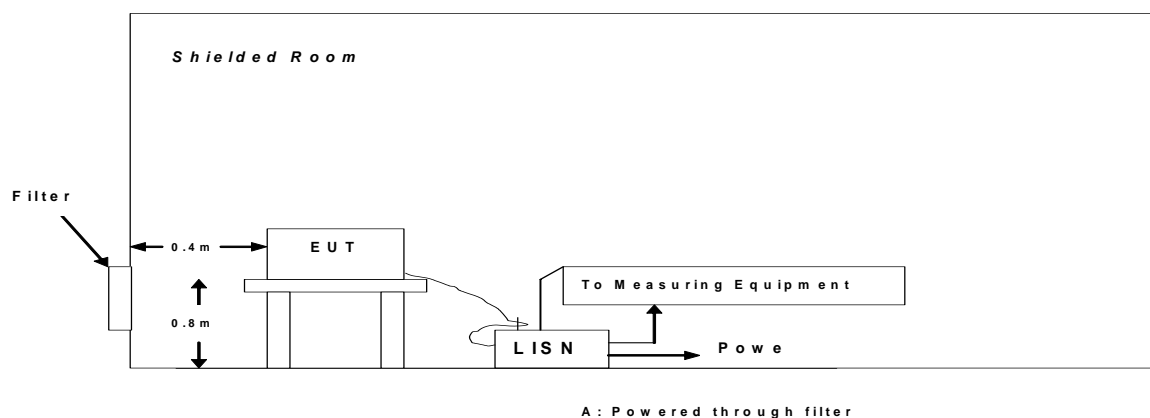
7.1. LIMITS OF LINE CONDUCTED EMISSION TEST

Frequency	Maximum RF Line Voltage	
	Q.P.(dBuV)	Average(dBuV)
150kHz-500kHz	66-56	56-46
500kHz-5MHz	56	46
5MHz-30MHz	60	50

****Note:** 1. The lower limit shall apply at the transition frequency.

2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz

7.2. BLOCK DIAGRAM OF TEST SETUP



7.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

- 1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per FCC Part 15 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- 2) Support equipment, if needed, was placed as per FCC Part 15 .
- 3) All I/O cables were positioned to simulate typical actual usage as per FCC Part 15 .
- 4) The EUT received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
- 5) All support equipments received power from a second LISN supplying power of AC 120V/60Hz, if any.
- 6) The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
- 7) Analyzer / Receiver scanned from 150 kHz to 30 MHz for emissions in each of the test modes.
- 8) During the above scans, the emissions were maximized by cable manipulation.
- 9) The following test mode(s) were scanned during the preliminary test:

Preliminary Conducted Emission Test				
Frequency Range Investigated		150KHz TO 30 MHz		
Mode of operation	Date	Report No.	Data#	Worst Mode
Normal	07/02/2008	SZSTS080603F1	DLR-110-BD-01_(L, N)	<input checked="" type="checkbox"/>

Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

7.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

EUT and support equipment was set up on the test bench as per step 9 of the preliminary test.

A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less -2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.

The test data of the worst case condition(s) was reported on the Summary Data page.

7.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

EUT : Wireless Bright Dim Remote Control Receiver **Power** : AC 120V
M/N : DLR-110-BD-01 **Temperature** : 27 °C
Mode : Normal **Humidity** : 60%

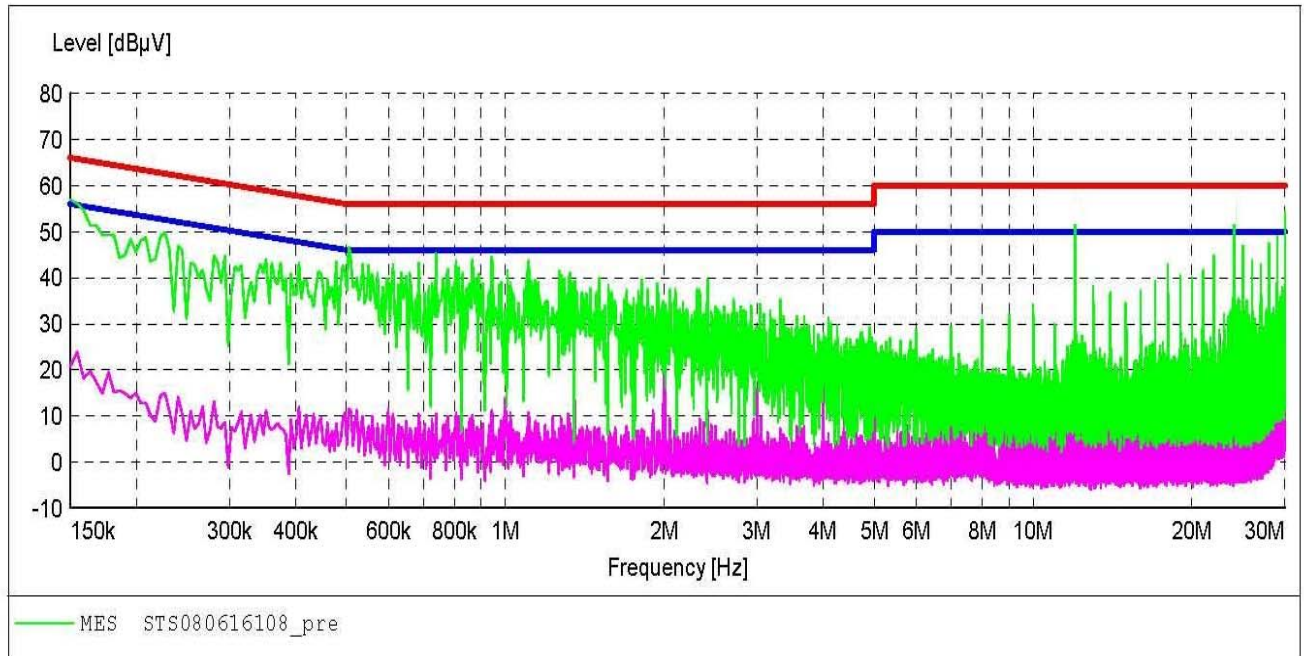
FREQ MHz	PEAK RAW dBuV	Q.P. RAW dBuV	AVG RAW dBuV	Q.P. Limit dBuV	AVG Limit dBuV	Q.P. Margin dB	AVG Margin dB	NOTE
0.447	53.18	47.60	38.33	57.00	47.00	-9.40	-8.67	L
0.496	50.22	48.00	35.25	56.00	46.00	-8.00	-10.75	L
0.519	47.62	47.80	36.30	56.00	46.00	-8.20	-9.70	L
0.564	46.63	47.30	36.09	56.00	46.00	-8.70	-9.91	L
12.000	58.89	51.45	49.10	60.00	50.00	-8.55	-0.90	L
24.000	54.61	50.29	48.88	60.00	50.00	-9.71	-1.12	L
0.272	50.75	46.15	40.95	61.00	51.00	-14.85	-10.05	N
0.492	54.86	47.80	38.55	56.00	46.00	-8.20	-7.45	N
0.614	55.68	46.92	35.64	56.00	46.00	-9.08	-10.36	N
1.180	54.04	48.27	31.54	56.00	46.00	-7.73	-14.46	N
12.003	56.74	52.11	49.30	60.00	50.00	-7.89	-0.70	N
24.000	57.20	50.42	48.96	60.00	50.00	-9.58	-1.04	N

Freq. = Emission frequency in MHz
 Reading level = Uncorrected Analyzer/Receiver reading
 Factor = Cable loss + LISN inserting loss
 Emission level = Reading level + Factor
 Limit = Limit stated in standard
 Margin = Reading in reference to limit
 “_” = The emission level complied with the Average limits, with at least 2 dB margin, so no further recheck.

Line Conducted Emission Test Data----- L Line

SCAN TABLE: "Voltage(150K-30M)FIN"

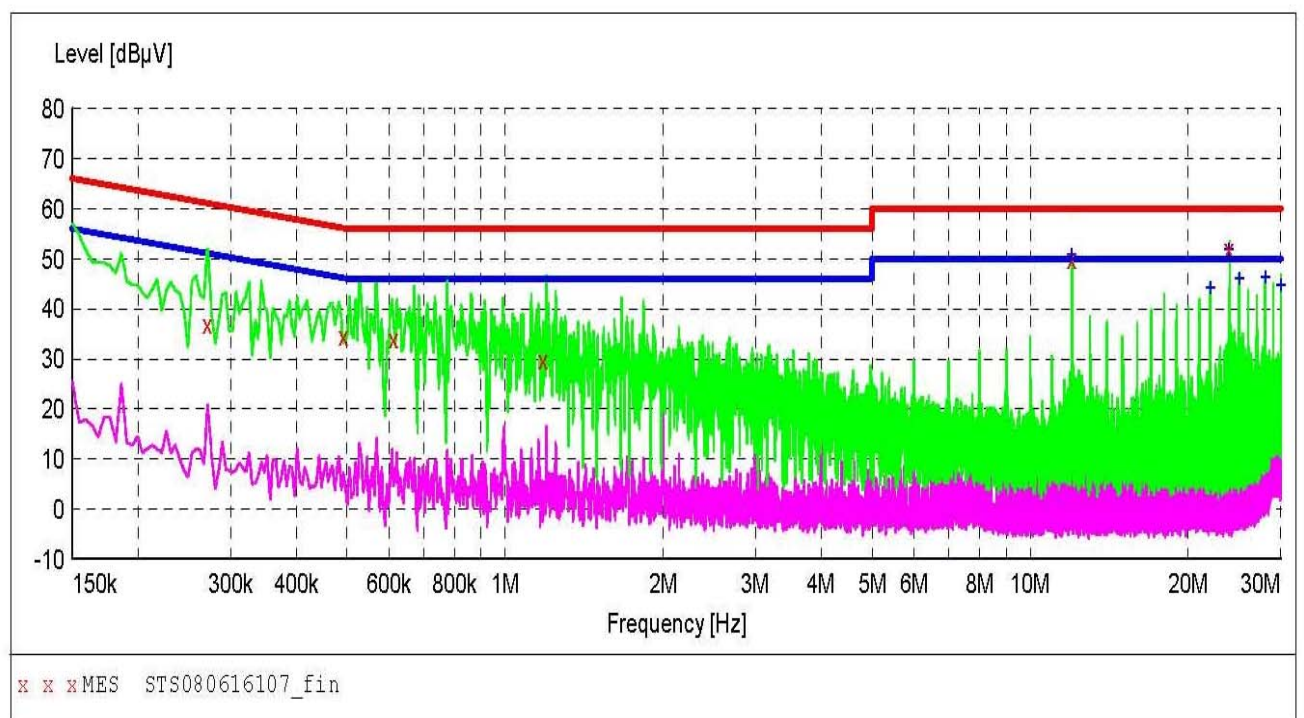
Short Description: 150K-30M Voltage



Line Conducted Emission Test Data----- N Line

SCAN TABLE: "Voltage(150K-30M)FIN"

Short Description: 150K-30M Voltage



8. RADIATED EMISSION TEST

8.1. LIMITS OF RADIATED DISTURBANCES AT 3M DISTANCES FOR CLASS B

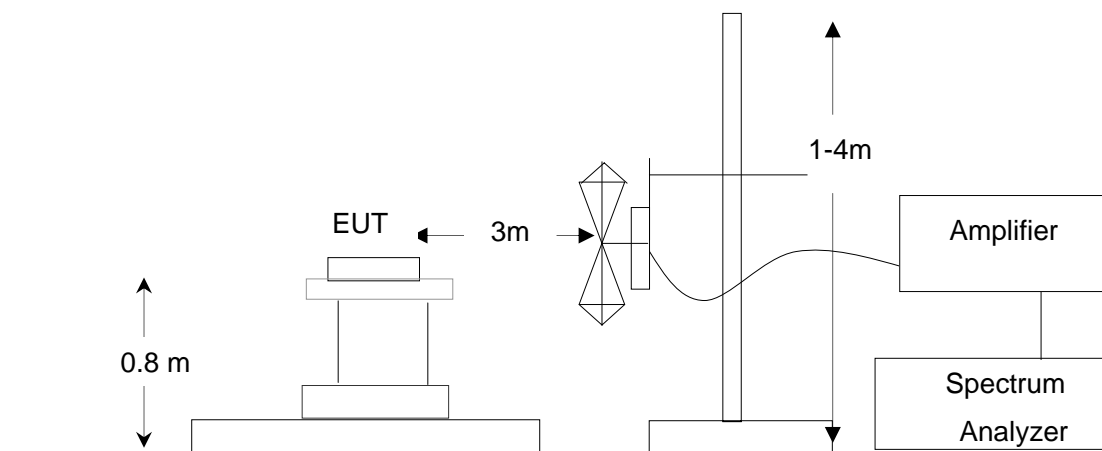
FREQUENCY (MHz)	dBuV/m (At 10m)	dBuV/m (At 3m)
	Class A	Class B
30 ~ 88	39	40
88 ~ 216	43.5	43.5
216 ~ 960	46	46
960 ~ 1000	49.5	54

NOTE: (1) The lower limit shall apply at the transition frequencies.

(2) Emission level (dBuV/m) = 20 log Emission level (uV/m).

8.2. BLOCK DIAGRAM OF TEST SETUP

System Diagram of Connections between EUT and Simulators



8.3. PRELIMINARY PROCEDURE OF RADIATED EMISSION TEST

- 1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden turntable with a height of 0.8 meters is used which is placed on the ground plane as per FCC Part 15 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
- 2) Support equipment, if needed, was placed as per FCC Part 15.
- 3) All I/O cables were positioned to simulate typical actual usage as per FCC Part 15.
- 4) The EUT received AC230V/50Hz power through the outlet socket under the turntable. All support equipments received AC230V/50Hz power from socket under the turntable, if any.
- 5) The antenna was placed at 10 meter away from the EUT as stated in FCC Part 15. The antenna connected to the Analyzer via a cable and at times a pre-amplifier would be used.
- 6) The Analyzer / Receiver quickly scanned from 30MHz to 1000MHz. The EUT test program was started. Emissions were scanned and measured rotating the EUT to 360 degrees and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
- 7) The following test mode(s) were scanned during the preliminary test:

Preliminary Radiated Emission Test				
Frequency Range Investigated			30 MHz TO 1000 MHz	
Mode of operation	Date	Report No.	Data#	Worst Mode
NORMAL	07/02/2008	SZSTS080603F1	DLR-110-BD-01 (H,V)	<input checked="" type="checkbox"/>
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Then, the EUT and cable configuration, antenna position, polarization and turntable position of the above highest emission level were recorded for final testing.

8.4. FINAL PROCEDURE OF RADIATED EMISSION TEST

EUT and support equipment were set up on the turntable as per step 7 of the preliminary test.

The Analyzer / Receiver scanned from 30MHz to 1000MHz. Emissions were scanned and measured rotating the EUT to 360 degrees, varying cable placement and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.

Recorded at least the six highest emissions. Emission frequency, amplitude, antenna position, polarization and turntable position were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit and Q.P./Peak reading is presented.

The test data of the worst case condition(s) was reported on the Summary Data page.

8.5. TEST RESULT OF RADIATED EMISSION TEST

EUT: Wireless Bright Dim Remote Control Receiver
M/N: DLR-110-BD-01
Mode: Normal

Power: By AC 120V
Temperature: 26 °C
Humidity: 60%

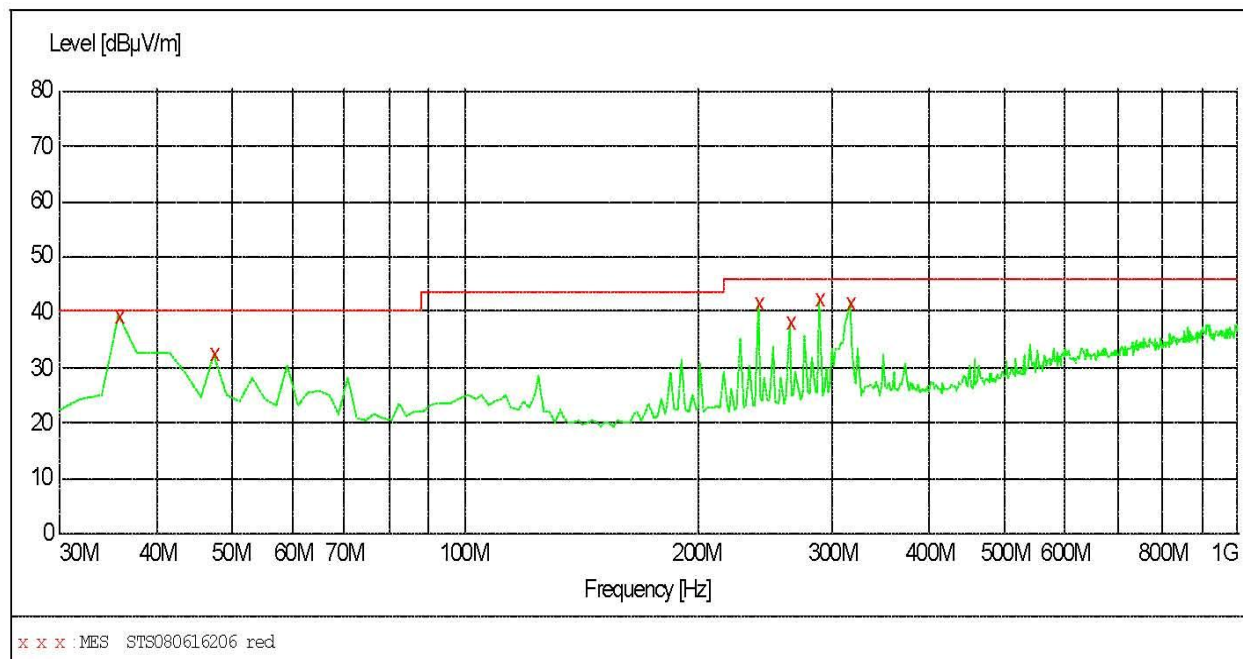
Frequency Range Investigated (30 MHz TO 1000 MHz)							
Freq. (MHz)	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Safe Margins (dBuV/m)	Ant. H/V	Mark
35.820	47.62	-16.82	30.80	40.00	-9.20	V	Q
43.580	48.49	-17.59	30.90	40.00	-9.10	V	Q
848.680	56.48	-20.48	36.00	46.00	-10.00	V	Q
889.420	56.21	-19.91	36.30	46.00	-9.70	V	Q
914.640	44.90	-8.50	36.40	46.00	-9.60	V	Q
957.320	43.52	-6.82	36.70	46.00	-9.30	V	Q
35.820	54.00	-15.70	38.30	40.00	-1.70	H	Q
47.460	49.00	-16.70	32.30	40.00	-7.70	H	Q
239.520	59.70	-18.20	41.50	46.00	-4.50	H	Q
262.800	50.75	-12.85	37.90	46.00	-8.10	H	Q
288.020	61.90	-19.80	42.10	46.00	-3.90	H	Q
315.180	61.70	-20.20	41.50	46.00	-4.50	H	Q

REMARKS: 1. P= Peak Reading; Q= Quasi-peak Reading A= Average Reading.
 2. The other emission levels were very low against the limit.

Radiated Emission Test Data----- Horizontal

SWEEP TABLE: "test (30M-1G) "

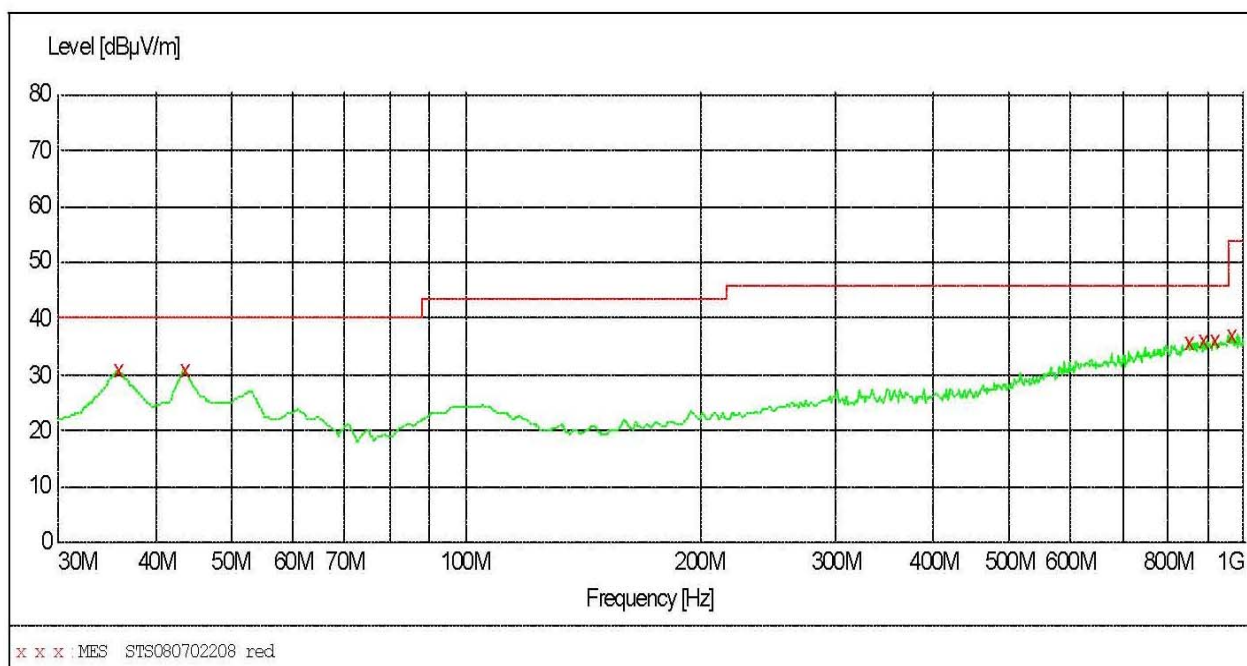
Short Description:		Field Strength			
Start	Stop	Detector	Meas.	IF	Transducer
Frequency	Frequency		Time	Bandw.	
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	VULB9163 NEW



Radiated Emission Test Data ----- Vertical

SWEEP TABLE: "test (30M-1G) "

Short Description:		Field Strength			
Start	Stop	Detector	Meas.	IF	Transducer
Frequency	Frequency		Time	Bandw.	
30.0 MHz	1.0 GHz	MaxPeak	Coupled	100 kHz	VULB9163 NEW



-----END OF REPORT-----