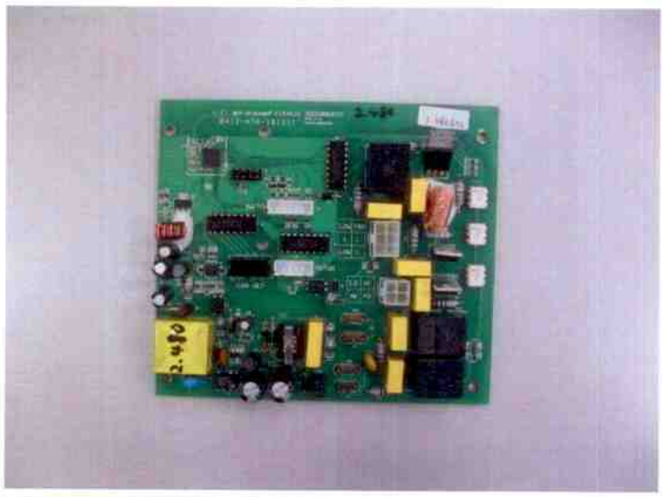
TEST REPORT No: (5211)239-0019

TEST REPORT

To:	**Jeckson Electric Co., Ltd.**	To:	-
Attn:	Henry Chan	Attn:	-
Address:	18/F, China Aerospace Centre, 143 Hoi Bun Road, Kwun Tong, Kowloon, Hong Kong	Address:	-
Fax:	23430391	Fax:	-
E-mail:	henrychan@casil-jeckson.com	E-mail:	-
Folder No.:	JEC-11AU254ETHP-B-A		

Factory name:	**Jeckson Electric Co,. Ltd. (Huizhou Factory)**
Location:	China Aerospace Industrial Park, 49 Zhong Kai No. 2 Road, Huizhou, Guangdong, China
Product:	**2.4GHz Midline Remote** **MODEL: 47-1012E-R**



Sample No:	HK110809/002
Test date:	August 25, 2011 To September 26, 2011
Test Requested:	FCC Part 15 - 2010
Test Method:	ANSI C63.4 - 2003
FCC ID:	ELY547-47-1012E-R

The results given in this report are related to the tested specimen of the described electrical apparatus.

CONCLUSION: The submitted sample was found to COMPLY with requirement of FCC Part 15 Subpart C.

Authorized Signature:

Reviewed by: Keith Yeung	Approved by: Steven Tsang
Date: October 7, 2011	Date: October 7, 2011

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Location of the test laboratory

Radiated and Conducted emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2003. An Open Area Test Site and Full Anechoic Chamber (FCC Listed Site, Registration No. 642151) are set up for investigation and located at :

BUREAU VERITAS HONG KONG LIMITED, EMC CENTRE

No. 2106-2107, 21/F., Westin Centre,
26 Hung To Road,
Kwun Tong, Kowloon,
Hong Kong

List of measuring equipment

Radiated Emission

EQUIPMENT	MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATION DUE
EMI TEST RECEIVER	R&S	ESCI	100379	05-SEP-2012
LOOP ANTENNA	ETS-LINDGREN	6502	00102266	12-MAY-2012
BILOG ANTENNA	SCHAFFNER	CBL6112D	25229	16-SEP-2012
OPEN AREA TEST SITE	BVCPS	N/A	N/A	07-JUL-2012
ANECHOIC CHAMBER	ALBATROSS	M-CDC	80374004499B	26-OCT-2011
COAXIAL CABLE	SUHNER	N/A	N/A	18-SEP-2012

Conducted Emission

EQUIPMENT	MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATION DUE
EMI TEST RECEIVER	R&S	ESCS30	830986/030	13-DEC-2011
LISN	R&S	ENV216	100024	12-APR-2012

Remarks:-
N/A : Not Applicable or Not Available

The measurement instrumentation uncertainty would be taking into consideration on each of the test result

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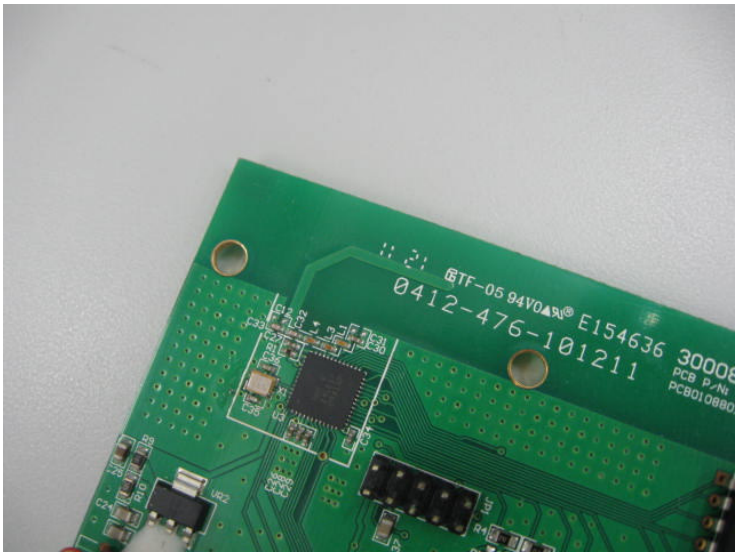
TEST REPORT No: (5211)239-0019

Equipment Under Test [EUT]
Description of Sample:
Model Name: 2.4GHz Midline Remote
Model Number: 47-1012E-R
Rating: 100-240Va.c., 50/60Hz, 12W

Description of EUT Operation:
The Equipment Under Test (EUT) is a **JECKSON ELECTRIC CO., LTD.** of Remote Control Transceiver. It is a transceiver and operating at 2402MHz to 2480MHz. The lowest, middle and highest frequencies were tested and the results are shown in the report. The EUT transmit while signal is being received, Modulation by IC, and type is FHSS.
The transceiver has the control:
The Midline Remote composes of 2 modules. One is the remote control unit (Transmitter) and the other is the power switch unit (Receiver).
The receiver is operated by DC8V and there is AC120V at the Relays output part (K1-K3). It consists of several parts, including 2.4GHz RF transceiver with MPU controller, driver and output relays.
When a signal is received through the antenna, the original encoded signal will then be retrieved by the RF transceiver Module and then be decoded a correct signal to make or break the relay contacts through the Driver in order to open or close the desired output in the Output stage(s).

Antenna Requirement (Section 15.203)
The EUT is use of a permanently antenna. It is PCB trace antenna. The antenna is not replaceable or user serviceable. The requirements of S15.203 are met. There are no deviations or exceptions to the specifications.



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Test Results

Emission

Conducted Emissions (150kHz to 30MHz)

Test Requirement:	FCC Part 15 Section 15.207
Test Method:	ANSI C63.4
Test Date(s):	2011-08-25
Temperature:	25.0 °C
Humidity:	62.0 %
Atmospheric Pressure:	100.7 kPa
Mode of Operation:	Transmission mode
Tested Voltage:	117Va.c., 60Hz

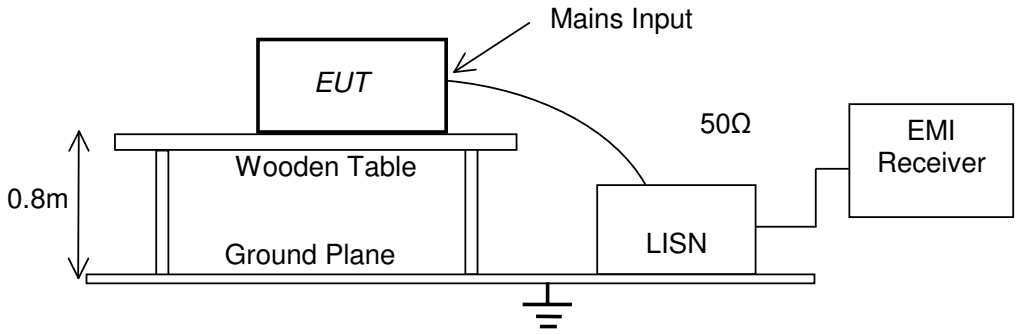
Test Procedure:

Conducted emissions measurements are investigated and also taken pursuant to the procedures of ANSI C63.4 – 2003. The EUT was setup as described in the procedures, and both lines were measured.

Initial measurements were performed in peak and average detection modes on the live and neutral line, any emissions recorded within 30dB of the relevant limit lines were re-measured using quasi-peak and average detection on the live and neutral lines with the worst case recorded in the table of results.

Location: Shielding Room, No. 603, 6/F., Westin Centre, 26 Hung To Road, Kwun Tong, Kowloon, Hong Kong

Test Setup:



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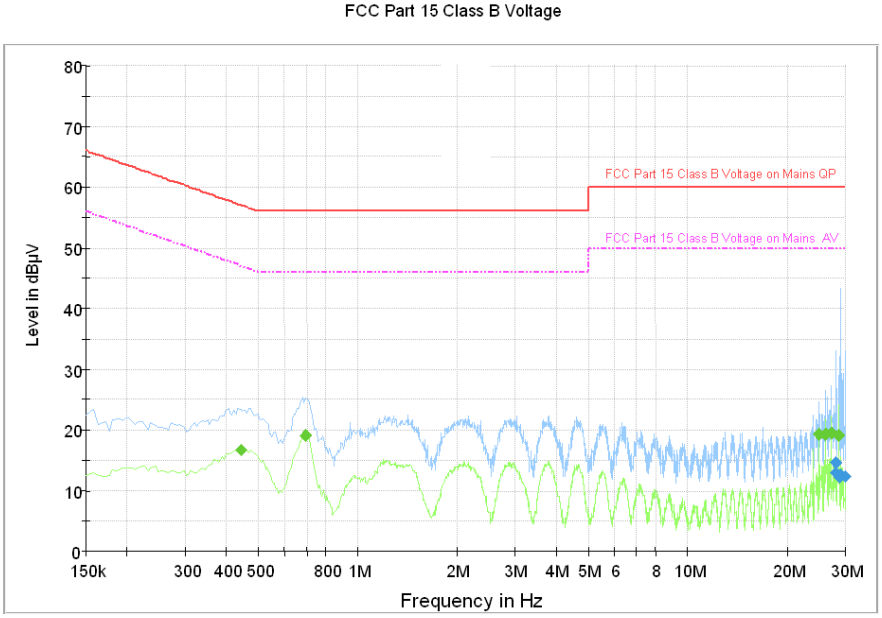
TEST REPORT No: (5211)239-0019

Measurement Data: Live

Test Result of (Transmission mode, Lowest frequency): PASS

Results and limit lines for Conducted Emission:

Limits for Conducted Emission Test, please refer to limit lines (Quasi-Peak and Average) in the following diagram & table.



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Margin (dB)	Limit (dBµV)
28.180500	14.5	9.000	L1	45.5	60.0
28.194000	13.0	9.000	L1	47.0	60.0
28.936500	12.1	9.000	L1	47.9	60.0
28.986000	12.4	9.000	L1	47.6	60.0
29.094000	12.6	9.000	L1	47.4	60.0
29.985000	12.2	9.000	L1	47.8	60.0

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Margin (dB)	Limit (dBµV)
0.442500	16.7	9.000	L1	30.3	47.0
0.699000	19.1	9.000	L1	26.9	46.0
24.972000	19.2	9.000	L1	30.8	50.0
26.160000	19.2	9.000	L1	30.8	50.0
27.348000	19.4	9.000	L1	30.6	50.0
28.540500	19.0	9.000	L1	31.0	50.0

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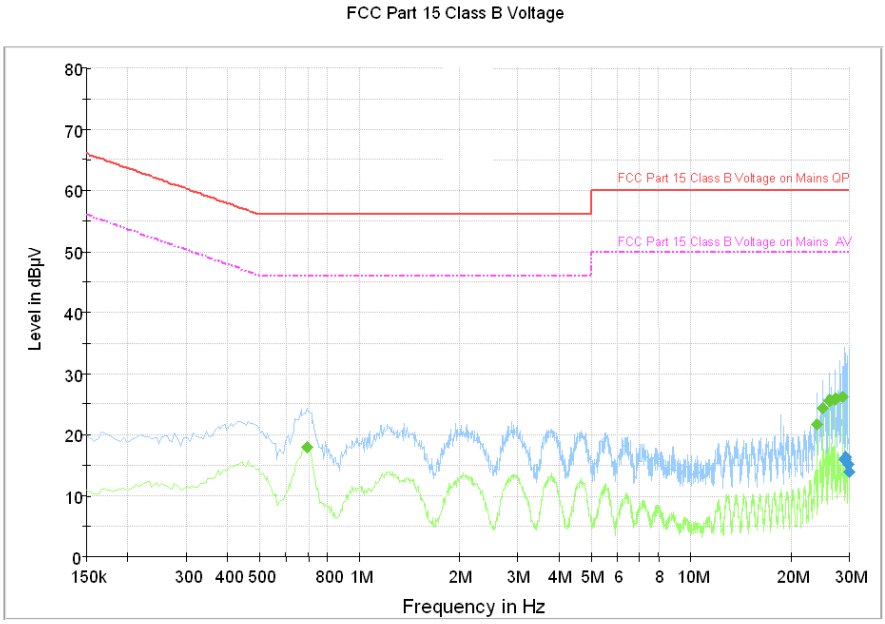
TEST REPORT No: (5211)239-0019

Measurement Data: Neutral

Test Result of (Transmission mode, Lowest frequency): PASS

Results and limit lines for Conducted Emission:

Limits for Conducted Emission Test, please refer to limit lines (Quasi-Peak and Average) in the following diagram & table.



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Margin (dB)	Limit (dBµV)
29.085000	15.8	9.000	N	44.2	60.0
29.292000	15.8	9.000	N	44.2	60.0
29.337000	16.4	9.000	N	43.6	60.0
29.719500	15.2	9.000	N	44.8	60.0
29.922000	13.8	9.000	N	46.2	60.0
29.980500	13.8	9.000	N	46.2	60.0

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Margin (dB)	Limit (dBµV)
0.694500	18.0	9.000	N	28.0	46.0
24.009000	21.6	9.000	N	28.4	50.0
24.972000	24.3	9.000	N	25.7	50.0
26.160000	25.6	9.000	N	24.4	50.0
27.348000	25.7	9.000	N	24.3	50.0
28.540500	26.1	9.000	N	23.9	50.0

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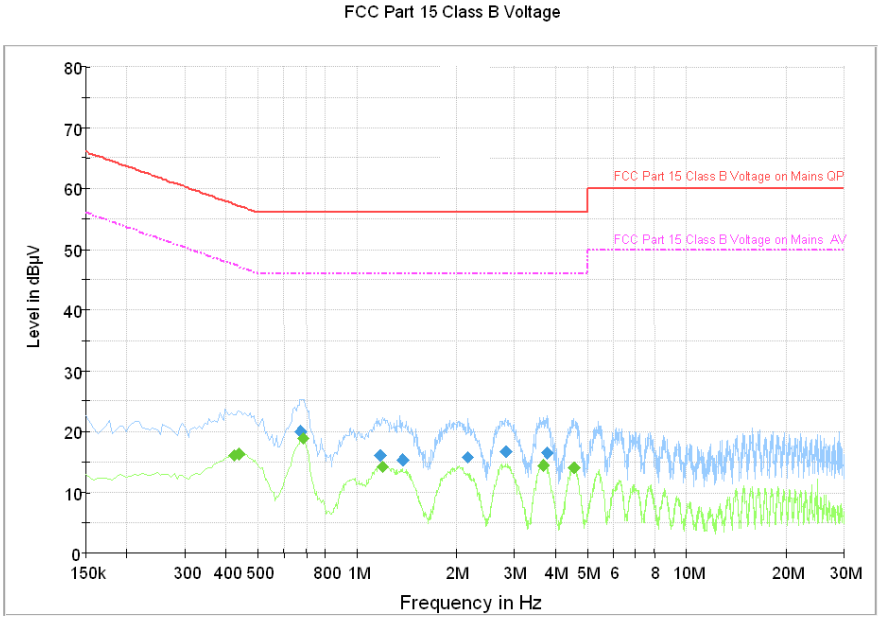
TEST REPORT No: (5211)239-0019

Measurement Data: Live

Test Result of (Transmission mode, Middle frequency): PASS

Results and limit lines for Conducted Emission:

Limits for Conducted Emission Test, please refer to limit lines (Quasi-Peak and Average) in the following diagram & table.



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Margin (dB)	Limit (dBµV)
0.676500	20.0	9.000	L1	36.0	56.0
1.180500	16.0	9.000	L1	40.0	56.0
1.383000	15.4	9.000	L1	40.6	56.0
2.166000	15.7	9.000	L1	40.3	56.0
2.832000	16.7	9.000	L1	39.3	56.0
3.759000	16.5	9.000	L1	39.5	56.0

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Margin (dB)	Limit (dBµV)
0.424500	16.1	9.000	L1	31.3	47.4
0.438000	16.2	9.000	L1	30.9	47.1
0.685500	18.8	9.000	L1	27.2	46.0
1.198500	14.2	9.000	L1	31.8	46.0
3.669000	14.4	9.000	L1	31.6	46.0
4.555500	14.0	9.000	L1	32.0	46.0

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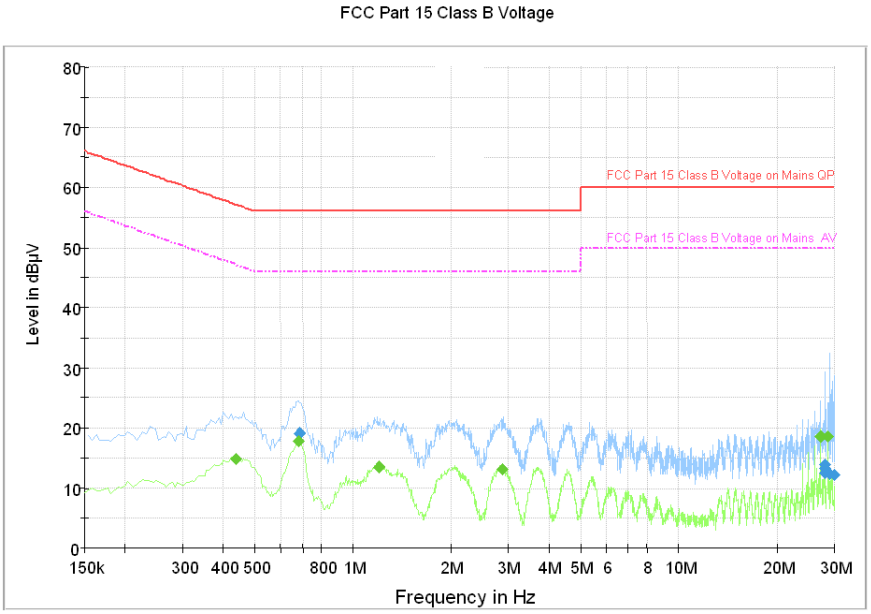
TEST REPORT No: (5211)239-0019

Measurement Data: Neutral

Test Result of (Transmission mode, Middle frequency): PASS

Results and limit lines for Conducted Emission:

Limits for Conducted Emission Test, please refer to limit lines (Quasi-Peak and Average) in the following diagram & table.



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Margin (dB)	Limit (dBµV)
0.685500	19.1	9.000	N	36.9	56.0
28.185000	13.2	9.000	N	46.8	60.0
28.207500	13.9	9.000	N	46.1	60.0
28.216500	12.6	9.000	N	47.4	60.0
28.999500	12.4	9.000	N	47.6	60.0
29.989500	12.2	9.000	N	47.8	60.0

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Margin (dB)	Limit (dBµV)
0.438000	14.8	9.000	N	32.3	47.1
0.681000	17.7	9.000	N	28.3	46.0
1.207500	13.4	9.000	N	32.6	46.0
2.877000	13.1	9.000	N	32.9	46.0
27.348000	18.5	9.000	N	31.5	50.0
28.536000	18.5	9.000	N	31.5	50.0

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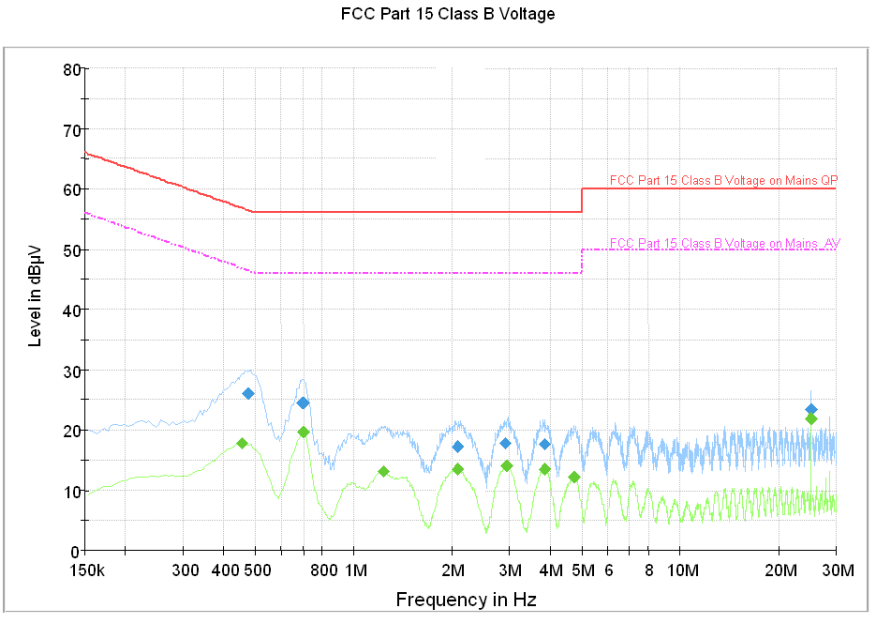
TEST REPORT No: (5211)239-0019

Measurement Data: Live

Test Result of (Transmission mode, Highest frequency): PASS

Results and limit lines for Conducted Emission:

Limits for Conducted Emission Test, please refer to limit lines (Quasi-Peak and Average) in the following diagram.



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TEST REPORT No: (5211)239-0019

Measurement Data: Live

Test Result of (Transmission mode, Highest frequency): PASS

Results and limit lines for Conducted Emission:
Limits for Conducted Emission Test, please refer to limit lines (Quasi-Peak and Average) in the following table.

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Margin (dB)	Limit (dBµV)
0.474000	25.9	9.000	L1	30.5	56.4
0.478500	25.9	9.000	L1	30.5	56.4
0.699000	24.4	9.000	L1	31.6	56.0
0.703500	24.5	9.000	L1	31.5	56.0
2.085000	17.3	9.000	L1	38.7	56.0
2.922000	17.7	9.000	L1	38.3	56.0
3.858000	17.5	9.000	L1	38.5	56.0
25.228500	23.4	9.000	L1	36.6	60.0

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Margin (dB)	Limit (dBµV)
0.456000	17.7	9.000	L1	29.1	46.8
0.703500	19.6	9.000	L1	26.4	46.0
1.234500	13.0	9.000	L1	33.0	46.0
2.076000	13.5	9.000	L1	32.5	46.0
2.953500	14.0	9.000	L1	32.0	46.0
3.853500	13.5	9.000	L1	32.5	46.0
4.749000	12.1	9.000	L1	33.9	46.0
25.228500	22.0	9.000	L1	28.0	50.0

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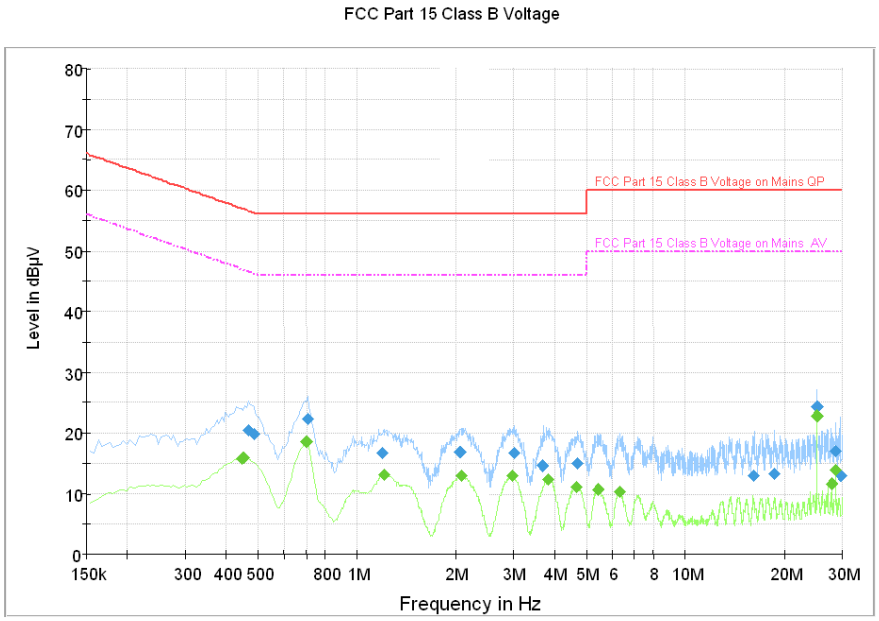
TEST REPORT No: (5211)239-0019

Measurement Data: Neutral

Test Result of (Transmission mode, Highest frequency): PASS

Results and limit lines for Conducted Emission:
Limits for Conducted Emission Test, please refer to limit lines (Quasi-Peak and Average) in the following diagram.



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TEST REPORT No: (5211)239-0019

Measurement Data: Neutral

Test Result of (Transmission mode, Highest frequency): PASS

Results and limit lines for Conducted Emission:

Limits for Conducted Emission Test, please refer to limit lines (Quasi-Peak and Average) in the following table.

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Margin (dB)	Limit (dBµV)
0.469500	20.4	9.000	N	36.1	56.5
0.487500	19.8	9.000	N	36.4	56.2
0.708000	22.3	9.000	N	33.7	56.0
1.194000	16.6	9.000	N	39.4	56.0
2.071500	16.8	9.000	N	39.2	56.0
3.007500	16.6	9.000	N	39.4	56.0
3.669000	14.6	9.000	N	41.4	56.0
4.690500	15.0	9.000	N	41.0	56.0
16.224000	12.9	9.000	N	47.1	60.0
18.685500	13.3	9.000	N	46.7	60.0
25.228500	24.3	9.000	N	35.7	60.0
28.549500	17.0	9.000	N	43.0	60.0
29.692500	12.9	9.000	N	47.1	60.0

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Margin (dB)	Limit (dBµV)
0.447000	15.7	9.000	N	31.2	46.9
0.451500	15.8	9.000	N	31.0	46.8
0.703500	18.5	9.000	N	27.5	46.0
1.212000	13.1	9.000	N	33.0	46.0
2.085000	13.0	9.000	N	33.0	46.0
2.980500	12.9	9.000	N	33.1	46.0
3.840000	12.3	9.000	N	33.7	46.0
4.681500	11.0	9.000	N	35.0	46.0
5.442000	10.6	9.000	N	39.4	50.0
6.292500	10.3	9.000	N	39.7	50.0
25.228500	22.9	9.000	N	27.1	50.0
28.000500	11.7	9.000	N	38.3	50.0
28.540500	13.8	9.000	N	36.2	50.0

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TEST REPORT No: (5211)239-0019

Radiated Emissions (Fundamental)

Test Requirement:	FCC Part 15 Section 15.249
Test Method:	ANSI C63.4
Test Date(s):	2011-09-26
Temperature:	27.0 °C
Humidity:	68.0 %
Atmospheric Pressure:	100.3 kPa
Mode of Operation:	Transmission mode
Tested Voltage:	117Va.c., 60Hz

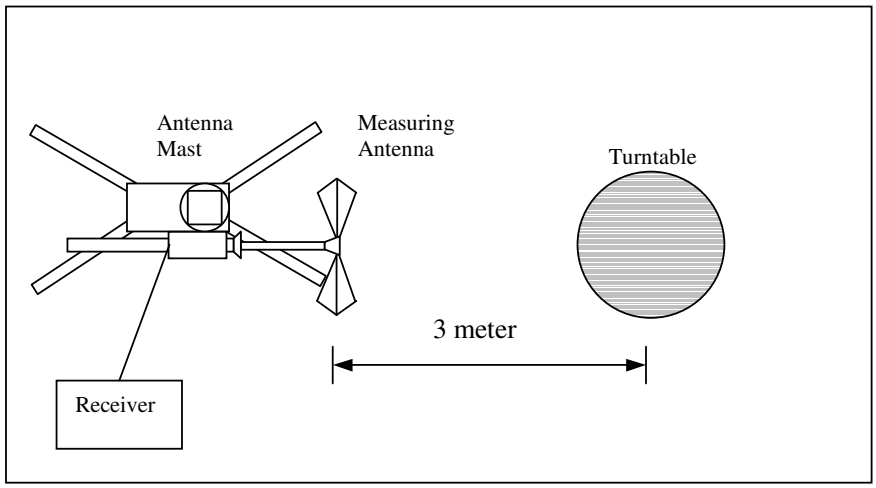
Test Procedure:

Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2003.

The equipment under test (EUT) was placed on a non-conductive turntable with dimensions of 1.5m x 1m and 0.8m high above the ground. 3m from the EUT, a broadband antenna mounting on the mast received the signal strength. 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, For battery operated equipment, the equipment tests shall be perform using new battery. The turntable was rotated to maximize the emission level. The antenna was then moving along the mast from 1m up to 4m until no more higher value was found. Both horizontal and vertical polarization of the antenna were placed and investigated.

Location: The Roof, Westin Centre, 26 Hung To Road, Kwun Tong, Kowloon, Hong Kong

Test Setup: Open Area Test Site



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Limits for Field Strength of Fundamental Emissions [FCC 47CFR 15.249]:

Frequency Range of Fundamental [MHz]	Field Strength of Fundamental Emission (Average) [mV/m]	Field Strength of Harmonics Emission (Average) [µV/m]
2400-2483.5	50	500

Measurement Data

Test Result of (Transmission mode, Lowest frequency): PASS

Detection mode: Peak

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
2402.00	H	-3.2	72.6	114.0	-41.4
2402.00	V	-3.2	86.4	114.0	-27.6

Detection mode: # Average

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
2402.00	H	-3.2	**52.6	94.0	-41.4
2402.00	V	-3.2	**66.4	94.0	-27.6

For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.
**Duty Cycle Correction = 20Log(0.092) =-20.6dB. Therefore, -20dB is taken as precedence.

Note: Field Strength includes Antenna Factor and Cable Loss.
Receiver setting: RBW = 1MHz
VBW = 1MHz

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Measurement Data

Test Result of (Transmission mode, Middle frequency): PASS

Detection mode: Peak

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
2440.00	H	-3.3	74.9	114.0	-39.1
2440.00	V	-3.3	84.7	114.0	-29.3

Detection mode: # Average

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
2440.00	H	-3.3	**54.9	94.0	-39.1
2440.00	V	-3.3	**64.7	94.0	-29.3

Test Result of (Transmission mode, Highest frequency): PASS

Detection mode: Peak

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
2480.00	H	-3.3	73.2	114.0	-40.8
2480.00	V	-3.3	83.1	114.0	-30.9

Detection mode: # Average

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
2480.00	H	-3.3	**53.2	94.0	-40.8
2480.00	V	-3.3	**63.1	94.0	-30.9

For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.
**Duty Cycle Correction = 20Log(0.092) =-20.6dB. Therefore, -20dB is taken as precedence.

Note: Field Strength includes Antenna Factor and Cable Loss.
Receiver setting: RBW = 1MHz
VBW = 1MHz

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TEST REPORT No: (5211)239-0019

Radiated Emissions (Spurious Emission)

Test Requirement:	FCC Part 15 Section 15.249
Test Method:	ANSI C63.4
Test Date(s):	2011-09-26
Temperature:	27.0 °C
Humidity:	68.0 %
Atmospheric Pressure:	100.3 kPa
Mode of Operation:	Transmission mode
Tested Voltage:	117Va.c., 60Hz

Measurement Data

Test Result of (Transmission mode, Lowest frequency): PASS

Detection mode: Peak

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
4804.00	H	2.9	43.5	74.0	-30.5
7206.00	H	10.2	50.7	74.0	-23.3
9608.00	H	11.1	49.5	74.0	-24.5
12010.00	H	16.5	56.7	74.0	-17.3
14412.00	H	23.6	58.1	74.0	-15.9
16814.00	H	21.9	56.5	74.0	-17.5
19216.00	H	23.7	56.9	74.0	-17.1
21618.00	H	25.2	58.4	74.0	-15.6
24020.00	H	26.3	56.9	74.0	-17.1
26422.00	H	27.5	59.2	74.0	-14.8

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz
VBW = 1MHz

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Measurement Data

Test Result of (Transmission mode, Lowest frequency): PASS

Detection mode: Peak

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
4804.00	V	2.9	51.1	74.0	-22.9
7206.00	V	10.2	51.5	74.0	-22.5
9608.00	V	11.1	50.4	74.0	-23.6
12010.00	V	16.5	56.7	74.0	-17.3
14412.00	V	23.6	58.2	74.0	-15.8
16814.00	V	21.9	59.0	74.0	-15.0
19216.00	V	23.7	56.8	74.0	-17.2
21618.00	V	25.2	58.5	74.0	-15.5
24020.00	V	26.3	57.4	74.0	-16.6
26422.00	V	27.5	59.3	74.0	-14.7

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz
VBW = 1MHz

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Measurement Data

Test Result of (Transmission mode, Lowest frequency): PASS

Detection mode: #Average

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
4804.00	H	2.9	**23.5	54.0	-30.5
7206.00	H	10.2	**30.7	54.0	-23.3
9608.00	H	11.1	**29.5	54.0	-24.5
12010.00	H	16.5	**36.7	54.0	-17.3
14412.00	H	23.6	**38.1	54.0	-15.9
16814.00	H	21.9	**36.5	54.0	-17.5
19216.00	H	23.7	**36.9	54.0	-17.1
21618.00	H	25.2	**38.4	54.0	-15.6
24020.00	H	26.3	**36.9	54.0	-17.1
26422.00	H	27.5	**39.2	54.0	-14.8

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
4804.00	V	2.9	**31.1	54.0	-22.9
7206.00	V	10.2	**31.5	54.0	-22.5
9608.00	V	11.1	**30.4	54.0	-23.6
12010.00	V	16.5	**36.7	54.0	-17.3
14412.00	V	23.6	**38.2	54.0	-15.8
16814.00	V	21.9	**39.0	54.0	-15.0
19216.00	V	23.7	**36.8	54.0	-17.2
21618.00	V	25.2	**38.5	54.0	-15.5
24020.00	V	26.3	**37.4	54.0	-16.6
26422.00	V	27.5	**39.3	54.0	-14.7

For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.
**Duty Cycle Correction = 20Log(0.092) =-20.6dB. Therefore, -20dB is taken as precedence.

Note: Field Strength includes Antenna Factor and Cable Loss.
Receiver setting: RBW = 1MHz
VBW = 1MHz

TEST REPORT No: (5211)239-0019

Measurement Data

Test Result of (Transmission mode, Middle frequency): PASS

Detection mode: Peak

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
4880.00	H	2.9	43.3	74.0	-30.7
7320.00	H	10.7	51.8	74.0	-22.2
9760.00	H	11.4	51.7	74.0	-22.3
12200.00	H	16.5	58.6	74.0	-15.4
14640.00	H	23.5	58.1	74.0	-15.9
17080.00	H	22.1	58.1	74.0	-15.9
19520.00	H	23.9	58.4	74.0	-15.6
21960.00	H	25.3	58.5	74.0	-15.5
24400.00	H	26.6	57.7	74.0	-16.3
26840.00	H	27.7	59.2	74.0	-14.8

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
4880.00	V	2.9	48.7	74.0	-25.3
7320.00	V	10.7	50.7	74.0	-23.3
9760.00	V	11.4	51.4	74.0	-22.6
12200.00	V	16.5	56.9	74.0	-17.1
14640.00	V	23.5	57.3	74.0	-16.7
17080.00	V	22.1	57.4	74.0	-16.6
19520.00	V	23.9	56.5	74.0	-17.5
21960.00	V	25.3	58.5	74.0	-15.5
24400.00	V	26.6	58.3	74.0	-15.7
26840.00	V	27.7	58.1	74.0	-15.9

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz
VBW = 1MHz

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TEST REPORT No: (5211)239-0019

Measurement Data

Test Result of (Transmission mode, Middle frequency): PASS

Detection mode: #Average

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
4881.04	H	2.9	**23.3	54.0	-30.7
7321.56	H	10.7	**31.8	54.0	-22.2
9762.08	H	11.4	**31.7	54.0	-22.3
12202.60	H	16.5	**38.6	54.0	-15.4
14643.12	H	23.5	**38.1	54.0	-15.9
17083.64	H	22.1	**38.1	54.0	-15.9
19524.16	H	23.9	**38.4	54.0	-15.6
21964.68	H	25.3	**38.5	54.0	-15.5
24405.20	H	26.6	**37.7	54.0	-16.3
26845.72	H	27.7	**39.2	54.0	-14.8

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
4881.04	V	2.9	**28.7	54.0	-25.3
7321.56	V	10.7	**30.7	54.0	-23.3
9762.08	V	11.4	**31.4	54.0	-22.6
12202.60	V	16.5	**36.9	54.0	-17.1
14643.12	V	23.5	**37.3	54.0	-16.7
17083.64	V	22.1	**37.4	54.0	-16.6
19524.16	V	23.9	**36.5	54.0	-17.5
21964.68	V	25.3	**38.5	54.0	-15.5
24405.20	V	26.6	**38.3	54.0	-15.7
26845.72	V	27.7	**38.1	54.0	-15.9

For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.
**Duty Cycle Correction = 20Log(0.092) =-20.6dB. Therefore, -20dB is taken as precedence.

Note: Field Strength includes Antenna Factor and Cable Loss.
Receiver setting: RBW = 1MHz
VBW = 1MHz

TEST REPORT No: (5211)239-0019

Measurement Data

Test Result of (Transmission mode, Highest frequency): PASS

Detection mode: Peak

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
4960.00	H	3.0	42.9	74.0	-31.1
7440.00	H	10.7	53.8	74.0	-20.2
9920.00	H	11.9	51.4	74.0	-22.6
12400.00	H	15.6	56.9	74.0	-17.1
14880.00	H	23.0	57.8	74.0	-16.2
17360.00	H	23.1	57.3	74.0	-16.7
19840.00	H	24.1	58.8	74.0	-15.2
22320.00	H	25.2	56.4	74.0	-17.6
24800.00	H	27.0	58.7	74.0	-15.3
27000.00	H	28.0	59.4	74.0	-14.6

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
4960.00	V	3.0	48.9	74.0	-25.1
7440.00	V	10.7	55.3	74.0	-18.7
9920.00	V	11.9	51.6	74.0	-22.4
12400.00	V	15.6	54.1	74.0	-19.9
14880.00	V	23.0	56.3	74.0	-17.7
17360.00	V	23.1	58.3	74.0	-15.7
19840.00	V	24.1	58.7	74.0	-15.3
22320.00	V	25.2	57.6	74.0	-16.4
24800.00	V	27.0	59.5	74.0	-14.5
27000.00	V	28.0	60.8	74.0	-13.2

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz
VBW = 1MHz

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Measurement Data

Test Result of (Transmission mode, Highest frequency): PASS

Detection mode: #Average

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
4960.00	H	3.0	**22.9	54.0	-31.1
7440.00	H	10.7	**33.8	54.0	-20.2
9920.00	H	11.9	**31.4	54.0	-22.6
12400.00	H	15.6	**36.9	54.0	-17.1
14880.00	H	23.0	**37.8	54.0	-16.2
17360.00	H	23.1	**37.3	54.0	-16.7
19840.00	H	24.1	**38.8	54.0	-15.2
22320.00	H	25.2	**36.4	54.0	-17.6
24800.00	H	27.0	**38.7	54.0	-15.3
27000.00	H	28.0	**39.4	54.0	-14.6

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
4960.00	V	3.0	**28.9	54.0	-25.1
7440.00	V	10.7	**35.3	54.0	-18.7
9920.00	V	11.9	**31.6	54.0	-22.4
12400.00	V	15.6	**34.1	54.0	-19.9
14880.00	V	23.0	**36.3	54.0	-17.7
17360.00	V	23.1	**38.3	54.0	-15.7
19840.00	V	24.1	**38.7	54.0	-15.3
22320.00	V	25.2	**37.6	54.0	-16.4
24800.00	V	27.0	**39.5	54.0	-14.5
27000.00	V	28.0	**40.8	54.0	-13.2

For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.
**Duty Cycle Correction = 20Log(0.092) =-20.6dB. Therefore, -20dB is taken as precedence.

Note: Field Strength includes Antenna Factor and Cable Loss.
Receiver setting: RBW = 1MHz
VBW = 1MHz

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TEST REPORT No: (5211)239-0019

Radiated Emissions

Test Requirement:	FCC Part 15 Section 15.209
Test Method:	ANSI C63.4
Test Date(s):	2011-09-26
Temperature:	27.0 °C
Humidity:	68.0 %
Atmospheric Pressure:	100.3 kPa
Mode of Operation:	Transmission mode
Tested Voltage:	117Va.c., 60Hz

Limits for Radiated Emissions [FCC 47 CFR 15.209]:

Frequency Range [MHz]	Quasi-Peak Limits [μV/m]
1.705-30	300
30-88	100
88-216	150
216-960	200
Above960	500

Measurement Data

Test Result of (Transmission mode, Lowest frequency): PASS

Detection mode: Peak

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
2399.99	H	-3.2	42.2	74.0	-31.8
2399.99	V	-3.2	54.9	74.0	-19.1

Detection mode: # Average

Frequency (MHz)	Polarity (H/V)	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
2399.99	H	-3.2	**22.2	54.0	-31.8
2399.99	V	-3.2	**34.9	54.0	-19.1

For pulse modulated devices and using measuring equipment employing a peak detection mode, properly adjusted for such factor as pulse desensitisation.
**Duty Cycle Correction = 20Log(0.092) =-20.6dB. Therefore, -20dB is taken as precedence.

Note: Field Strength includes Antenna Factor and Cable Loss.
Receiver setting: RBW = 1MHz
VBW = 1MHz

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TEST REPORT No: (5211)239-0019

Measurement Data

Test Result of (Transmission mode, Middle frequency): PASS

Detection mode: Quasi-Peak

Frequency (MHz)	Polarity (H/V)	Field Strength at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
Emissions detected are more than 20 dB below the limit line(s)				

Test Result of (Transmission mode, Highest frequency): PASS

Detection mode: Quasi-Peak

Frequency (MHz)	Polarity (H/V)	Field Strength at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
Emissions detected are more than 20 dB below the limit line(s)				

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 120KHz
VBW = 120KHz

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TEST REPORT No: (5211)239-0019

Frequency range of Fundamental Emission

Test Requirement:	FCC 47 CFR 15.249
Test Method:	ANSI C63.4:2003 (Section 13.1.7)
Test Date(s):	2011-09-26
Temperature:	27.0 °C
Humidity:	68.0 %
Atmospheric Pressure:	100.3 kPa
Mode of Operation:	Transmission mode
Tested Voltage:	117Va.c., 60Hz

Test Method:

The bandwidth is measured at an amplitude level reduced from the reference level by a specified ratio. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.

Limits for Frequency range of Fundamental Emission:

Frequency [MHz]	FCC Limits [MHz]
2402.00 – 2480.00	2400 – 2483.5

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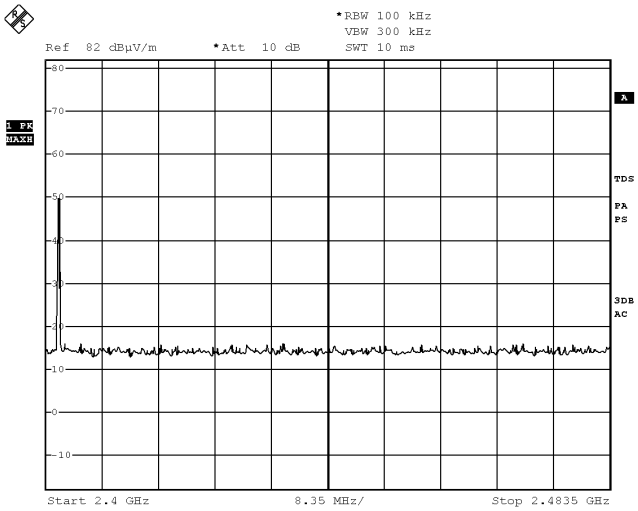
TEST REPORT No: (5211)239-0019

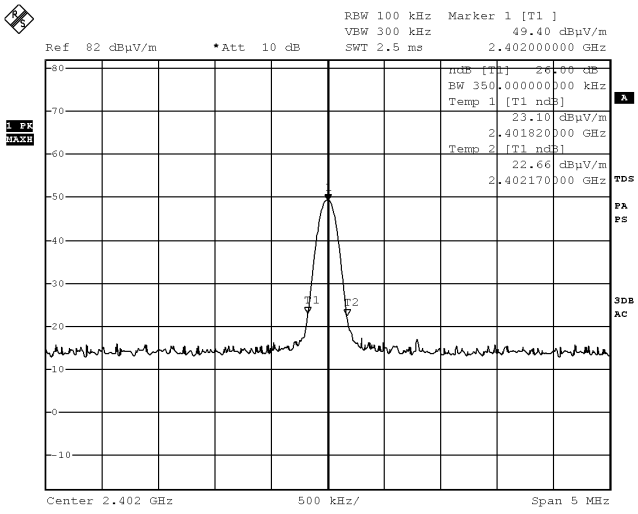
Measurement Data :

Test Result of Frequency Range of Fundamental Emission: PASS
Lowest Frequency – 2402.00MHz



Date: 26.SEP.2011 15:55:59

Test Result of 26dB Bandwidth of Fundamental Emission: PASS
Lowest Frequency – 2402.00MHz



Date: 26.SEP.2011 16:05:06

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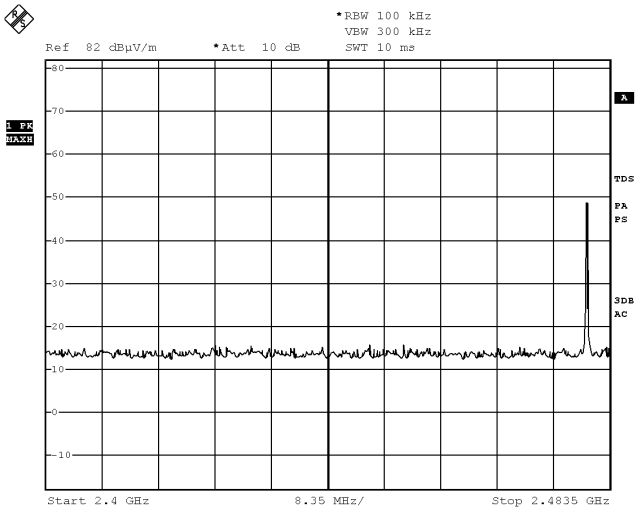
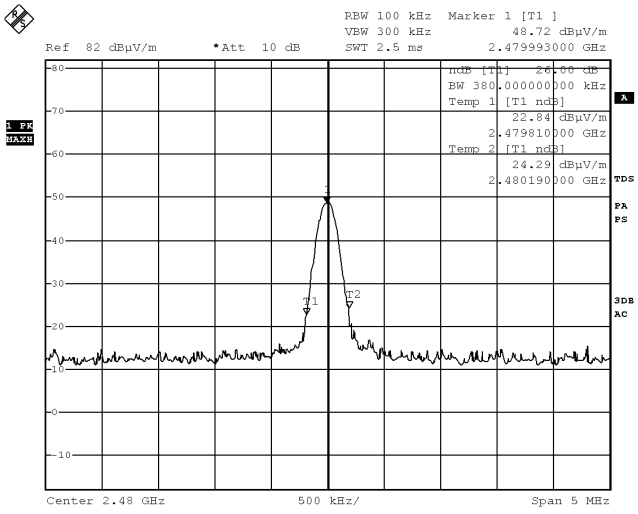
Measurement Data :

Test Result of Frequency Range of Fundamental Emission: PASS
Highest Frequency – 2480.00MHz



Date: 26.SEP.2011 16:10:43

Test Result of 26dB Bandwidth of Fundamental Emission: PASS
Highest Frequency – 2480.00MHz



Date: 26.SEP.2011 16:11:16

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Duty Cycle Correction During 100msec:

Each function key sends a different series of characters, but each packet period (69msec) never exceeds a series of 16 pulses (0.4msec). Assuming any combination of short or long pulses may be obtained due to encoding the worst case transmit duty cycle would be considered (16 x 0.4msec) per 69msec=9.2% duty cycle. Figure A and B show the characteristics of the pulse train for one of these functions.

Remarks:

Duty Cycle Correction = 20Log(0.092) =-20.6dB
Therefore, -20dB is taken as precedence.

The following figures [Figure A and Figure B] show the characteristics of the pulse train for one of these functions.

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Figure A [Pulse Train]

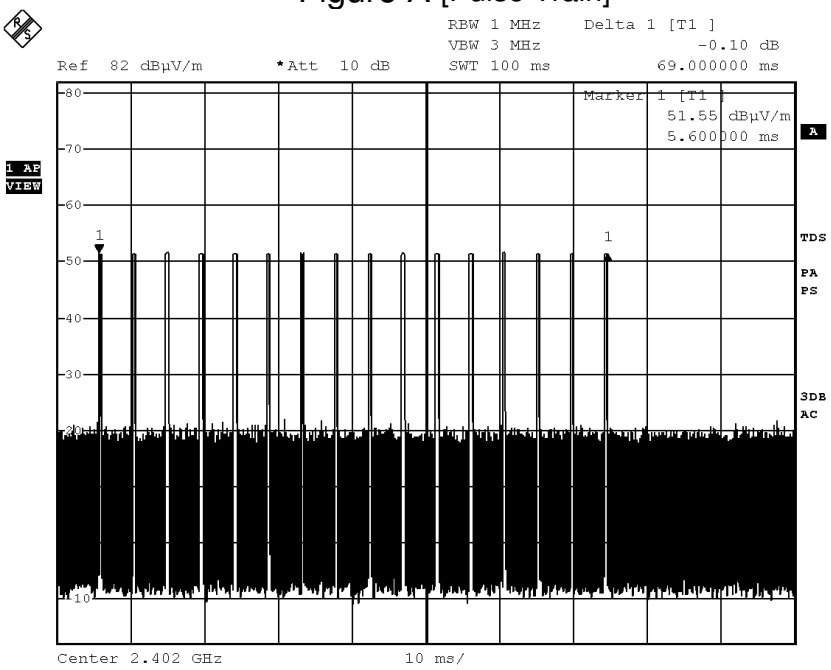
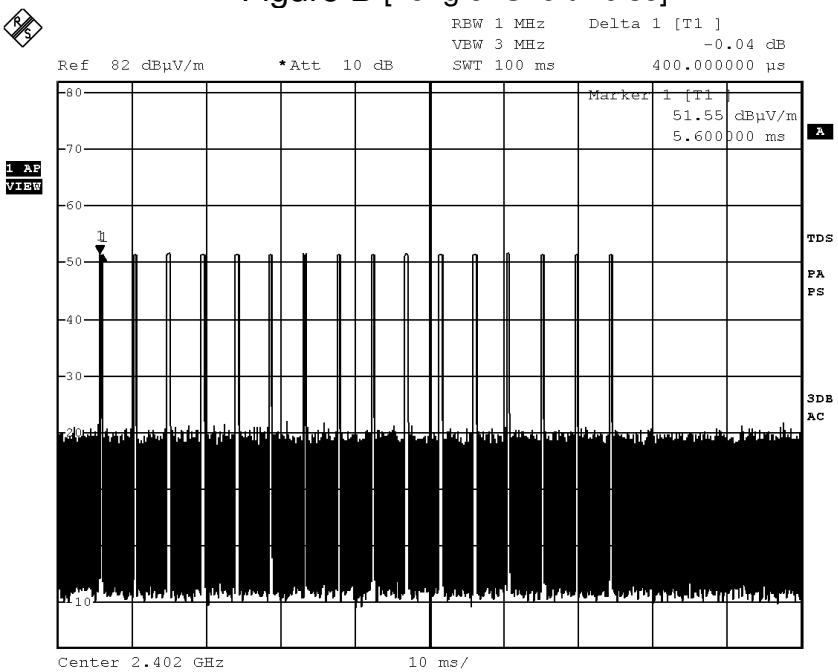


Figure B [Long or Short Pulse]



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Photographs of EUT

Front View of the product

Rear View of the product

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Measurement of Conducted Emission Test Set Up

Measurement of Radiated Emission Test Set Up

******* End of Report *******

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