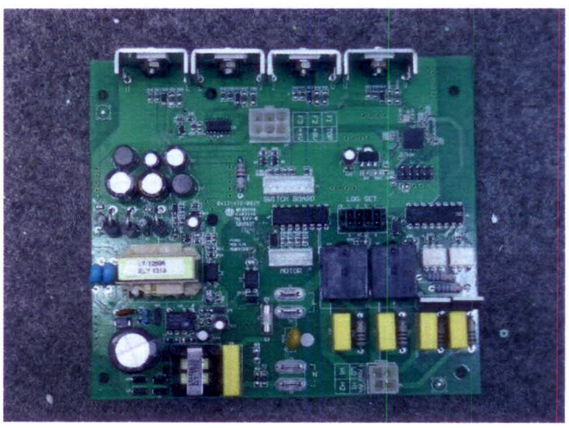
TEST REPORT No: (5213)183-2024

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-13JU262ETHP-B-A		

Factory name:	**HUIZHOU FACTORY JECKSON ELECTRIC CO., LTD.**
Location:	China Aerospace Industrial Park, Zhongkai High-Technology Industrial Zone, Huizhou, Guangdong, P.R. China. 516006
Product:	2.4GHz Midline Model No.: 36-0029-R



Sample No:	HK130626/015
Test date:	July 11, 2013 To August 5, 2013
Test Requested:	FCC Part 15 - 2011
Test Method:	ANSI C63.4 - 2009
FCC ID:	ELY547-36-0029-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: August 16, 2013	Date: August 16, 2013

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TEST REPORT No: (5213)183-2024
Test Result Summary

EMISSION TEST			
Test requirement: FCC Part 15 - 2012			
Test Condition	Test Method	Test Result	
		Pass	Failed
Conducted Emission Test, 0.15MHz to 30MHz	ANSI C63.4	☒	☐
Radiated Emission Test, 9kHz to 24GHz	ANSI C63.4	☒	☐
Frequency range of Fundamental Emission	ANSI C63.4	☒	☐
26dB Bandwidth of Fundamental Emission	ANSI C63.4	☒	☐
Duty Cycle Correction During 100mesc	ANSI C63.4	☒	☐

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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 – 2009. 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.	LAST CALIBRATION	CALIBRATION DUE
EMI TEST RECEIVER	R&S	ESCI	100379	29-JAN-2013	28-JAN-2014
SPECTRUM ANALYZER	R&S	R3127	111000909	30-JAN-2013	29-JAN-2014
BILOG ANTENNA	SCHAFFNER	CBL6112D	25229	12-SEP-2012	11-SEP-2013
HORN ANTENNA	SCHWARZBECK	BBHA9120D	9120D-692	13-SEP-2013	12-SEP-2013
PYRAMIDAL STANDARD GAIN HORN ANTENNA	ETS-LINDGREN	3160-09	00130130	24-JAN-2012	23-JAN-2014
OPEN AREA TEST SITE	BVCPS	N/A	N/A	09-JUL-2013	08-JUL-2014
ANECHOIC CHAMBER	ALBATROSS	M-CDC	80374004499B	06-FEB-2013	05-FEB-2014
COAXIAL CABLE	SUHNER	N/A	N/A	08-NOV-2012	07-NOV-2013
COAXIAL CABLE	HUBER + SUHNER	RG214	N/A	25-SEP-2012	24-SEP-2013

Conducted Emission

EQUIPMENT	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CALIBTATION	CALIBRATION DUE
EMI TEST RECEIVER	R&S	ESCS30	830986/030	21-MAR-13	20-MAR-14
LISN	R&S	ESH3-Z5	100116	11-JUL-13	10-JUL-14

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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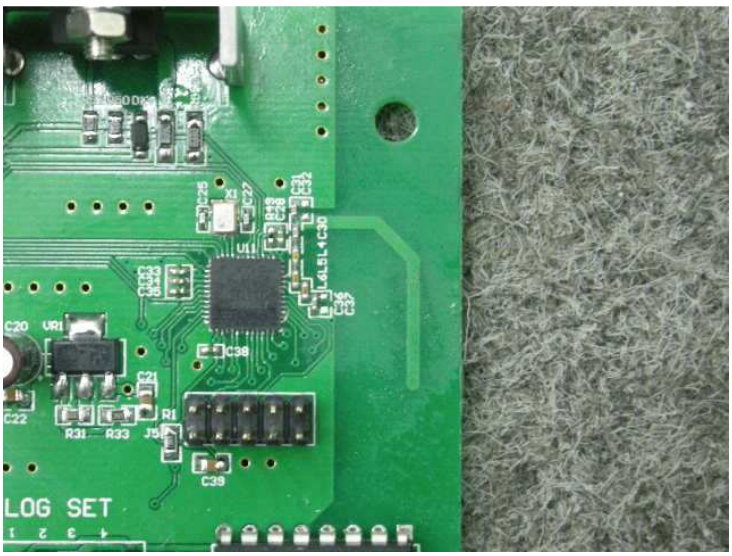
TEST REPORT No: (5213)183-2024

Equipment Under Test [EUT]
Description of Sample:
Model Name: 2.4GHz Midline
Model Number: 36-0029-R
Rating: 100-240Va.c., 50/60Hz

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 GFSK.
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-K2). 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).
The switch board consists a “ON/ OFF” switch and a trigger switch.

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

Conducted Emissions (150kHz to 30MHz)

Test Requirement:	FCC Part 15 Section 15.207
Test Method:	ANSI C63.4
Test Limits:	Class B
Test Date(s):	2013-07-11
Temperature:	24.0 °C
Humidity:	68.0 %
Atmospheric Pressure:	100.2 kPa
Mode of Operation:	Transmission mode
Tested Voltage:	117Va.c., 60Hz

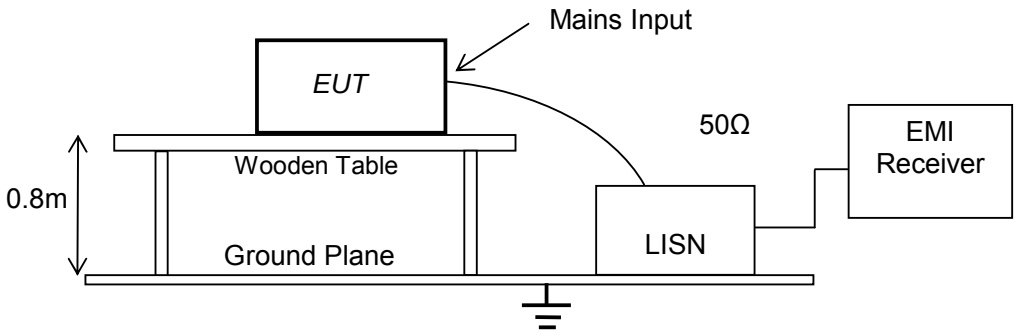
Test Method:

Conducted emissions measurements are investigated and also taken pursuant to the procedures of ANSI C63.4 – 2009. 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: No. 603, 6/F., Westin Centre, 26 Hung To Road, Kwun Tong, Kowloon, Hong Kong

Test Setup: Shielding Room



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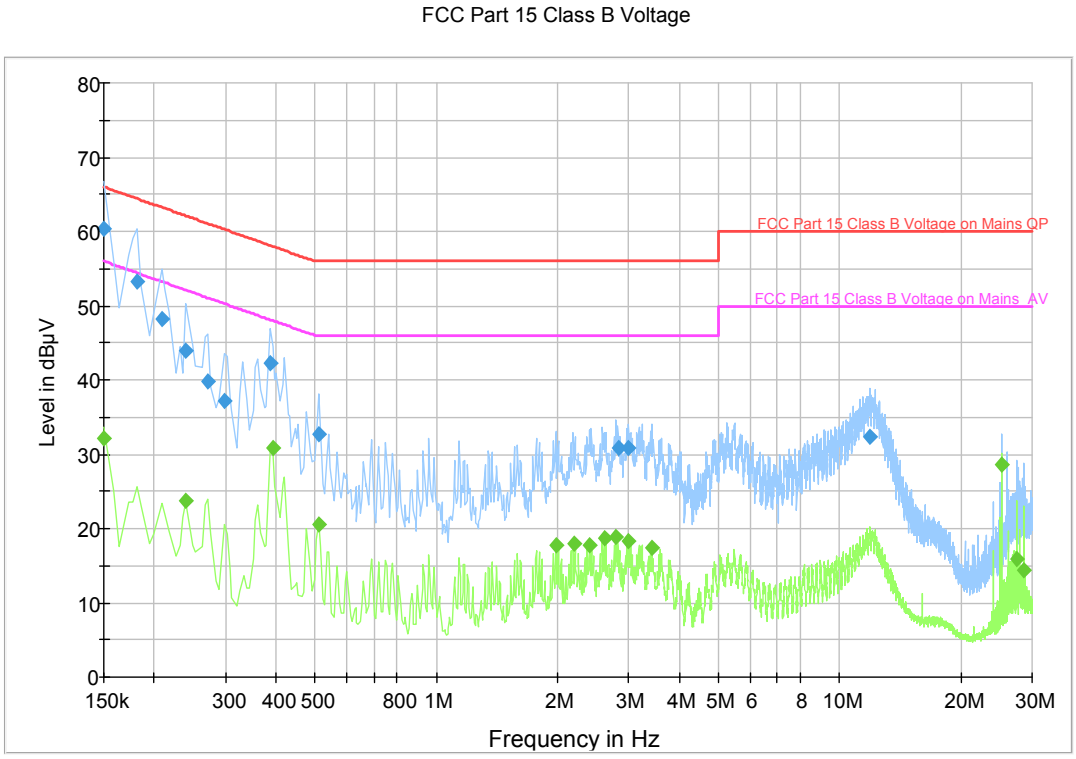
TEST REPORT No: (5213)183-2024

Measurement Data: Live

Test Result of (Transmission mode): 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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Results and limit lines for Conducted Emission:

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

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Margin (dB)	Limit (dBµV)
0.150000	60.3	9.000	L1	5.7	66.0
0.181500	53.2	9.000	L1	11.2	64.4
0.208500	48.2	9.000	L1	15.1	63.3
0.240000	44.0	9.000	L1	18.1	62.1
0.271500	39.7	9.000	L1	21.4	61.1
0.298500	37.2	9.000	L1	23.1	60.3
0.388500	42.3	9.000	L1	15.8	58.1
0.510000	32.8	9.000	L1	23.2	56.0
2.823000	30.8	9.000	L1	25.2	56.0
3.003000	30.8	9.000	L1	25.2	56.0
11.854500	32.3	9.000	L1	27.7	60.0

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Margin (dB)	Limit (dBµV)
0.150000	32.2	9.000	L1	23.8	56.0
0.240000	23.8	9.000	L1	28.3	52.1
0.393000	30.8	9.000	L1	17.2	48.0
0.510000	20.6	9.000	L1	25.4	46.0
1.981500	17.7	9.000	L1	28.3	46.0
2.193000	17.9	9.000	L1	28.1	46.0
2.400000	17.7	9.000	L1	28.3	46.0
2.611500	18.7	9.000	L1	27.3	46.0
2.791500	18.8	9.000	L1	27.2	46.0
3.003000	18.4	9.000	L1	27.6	46.0
3.421500	17.4	9.000	L1	28.6	46.0
25.228500	28.7	9.000	L1	21.3	50.0
27.501000	16.0	9.000	L1	34.0	50.0
28.639500	14.5	9.000	L1	35.5	50.0

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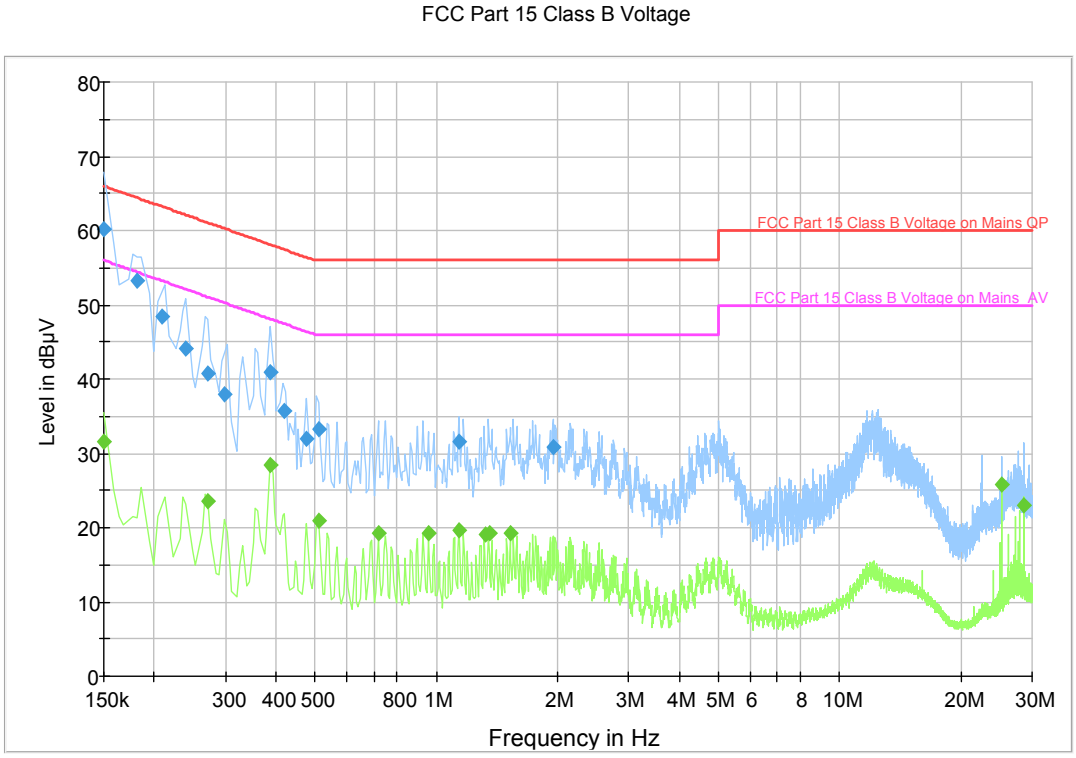
TEST REPORT No: (5213)183-2024

Measurement Data: Neutral

Test Result of (Transmission mode): 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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Results and limit lines for Conducted Emission:

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

Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Margin (dB)	Limit (dBµV)
0.150000	60.2	9.000	N	5.8	66.0
0.181500	53.4	9.000	N	11.0	64.4
0.208500	48.4	9.000	N	14.9	63.3
0.240000	44.1	9.000	N	18.0	62.1
0.271500	40.8	9.000	N	20.3	61.1
0.298500	37.9	9.000	N	22.4	60.3
0.388500	41.0	9.000	N	17.1	58.1
0.420000	35.7	9.000	N	21.7	57.4
0.478500	31.9	9.000	N	24.5	56.4
0.510000	33.3	9.000	N	22.8	56.0
1.140000	31.5	9.000	N	24.5	56.0
1.950000	30.9	9.000	N	25.1	56.0

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Margin (dB)	Limit (dBµV)
0.150000	31.6	9.000	N	24.4	56.0
0.271500	23.6	9.000	N	27.5	51.1
0.388500	28.4	9.000	N	19.7	48.1
0.510000	21.0	9.000	N	25.0	46.0
0.721500	19.2	9.000	N	26.8	46.0
0.960000	19.2	9.000	N	26.8	46.0
1.140000	19.6	9.000	N	26.4	46.0
1.320000	19.1	9.000	N	26.9	46.0
1.351500	19.3	9.000	N	26.8	46.0
1.531500	19.2	9.000	N	26.8	46.0
25.228500	25.7	9.000	N	24.3	50.0
28.527000	22.9	9.000	N	27.1	50.0

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TEST REPORT No: (5213)183-2024

Radiated Emissions (Fundamental)

Test Requirement:	FCC Part 15 Section 15.249
Test Method:	ANSI C63.4
Test Date(s):	2013-08-05
Temperature:	30.0 °C
Humidity:	78.0 %
Atmospheric Pressure:	100.1 kPa
Mode of Operation:	Transmission mode
Tested Voltage:	117Va.c., 60Hz

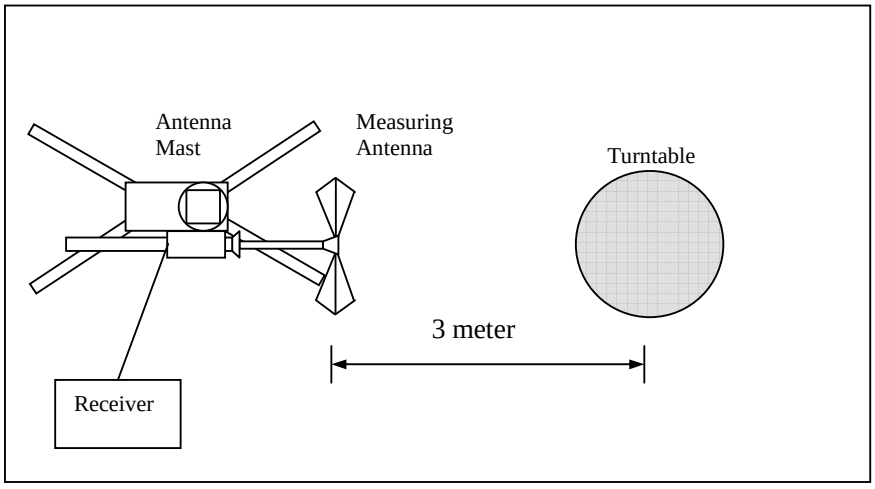
Test Procedure:

Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2009.

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

Frequency (MHz)	Polarity (H/V)	Antenna Factor & Cable Loss (dB/m)	Duty-cycle correction (dB)	Field Strength at 3m – Peak (dBμV/m)	Limit at 3m – Peak (dBμV/m)	Margin - Peak (dB)	Field Strength at 3m – Average (dBμV/m)	Limit at 3m – Average (dBμV/m)	Margin - Average (dB)
2402.00	H	-2.7	-19.7	76.1	114.0	-37.9	**56.4	94.0	-37.6
2402.00	V	-2.7	-19.7	85.2	114.0	-28.8	**65.5	94.0	-28.5

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

Frequency (MHz)	Polarity (H/V)	Antenna Factor & Cable Loss (dB/m)	Duty-cycle correction (dB)	Field Strength at 3m – Peak (dBμV/m)	Limit at 3m – Peak (dBμV/m)	Margin - Peak (dB)	Field Strength at 3m – Average (dBμV/m)	Limit at 3m – Average (dBμV/m)	Margin - Average (dB)
2440.00	H	-2.7	-19.7	78.8	114.0	-35.2	**59.1	94.0	-34.9
2440.00	V	-2.7	-19.7	86.9	114.0	-27.1	**67.2	94.0	-26.8

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

Frequency (MHz)	Polarity (H/V)	Antenna Factor & Cable Loss (dB/m)	Duty-cycle correction (dB)	Field Strength at 3m – Peak (dBμV/m)	Limit at 3m – Peak (dBμV/m)	Margin - Peak (dB)	Field Strength at 3m – Average (dBμV/m)	Limit at 3m – Average (dBμV/m)	Margin - Average (dB)
2480.00	H	-2.7	-19.7	77.0	114.0	-37.0	**57.3	94.0	-36.7
2480.00	V	-2.7	-19.7	84.8	114.0	-29.2	**65.1	94.0	-28.9

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(0.103) = -19.7dB.

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

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TEST REPORT No: (5213)183-2024

Radiated Emissions (Spurious Emission)

Test Requirement:	FCC Part 15 Section 15.249
Test Method:	ANSI C63.4
Test Date(s):	2013-08-05
Temperature:	30.0 °C
Humidity:	78.0 %
Atmospheric Pressure:	100.1 kPa
Mode of Operation:	Transmission mode
Tested Voltage:	117Va.c., 60Hz

Measurement Data

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

Frequency (MHz)	Polarity (H/V)	Antenna Factor & Cable Loss (dB/m)	Duty-cycle correction (dB)	Field Strength at 3m – Peak (dBµV/m)	Limit at 3m – Peak (dBµV/m)	Margin - Peak (dB)	Field Strength at 3m – Average (dBµV/m)	Limit at 3m – Average (dBµV/m)	Margin - Average (dB)
2400.00	H	-2.7	-19.7	57.6	74.0	-16.4	**37.9	54.0	-16.1
4804.00	H	6.3	-19.7	60.3	74.0	-13.7	**40.6	54.0	-13.4
7206.00	H	13.5	-19.7	60.5	74.0	-13.5	**40.8	54.0	-13.2
9608.00	H	13.2	-19.7	60.3	74.0	-13.7	**40.6	54.0	-13.4
12010.00	H	18.5	-19.7	61.2	74.0	-12.8	**41.5	54.0	-12.5
14412.00	H	19.2	-19.7	60.8	74.0	-13.2	**41.1	54.0	-12.9
16814.00	H	25.4	-19.7	60.8	74.0	-13.2	**41.1	54.0	-12.9
19216.00	H	27.3	-19.7	61.3	74.0	-12.7	**41.6	54.0	-12.4
21618.00	H	29.3	-19.7	61.3	74.0	-12.7	**41.6	54.0	-12.4
24020.00	H	32.1	-19.7	62.7	74.0	-11.3	**43.0	54.0	-11.0
26422.00	H	33.9	-19.7	61.5	74.0	-12.5	**41.8	54.0	-12.2

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(0.103) = -19.7dB.

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

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

Frequency (MHz)	Polarity (H/V)	Antenna Factor & Cable Loss (dB/m)	Duty-cycle correction (dB)	Field Strength at 3m – Peak (dBµV/m)	Limit at 3m – Peak (dBµV/m)	Margin - Peak (dB)	Field Strength at 3m – Average (dBµV/m)	Limit at 3m – Average (dBµV/m)	Margin - Average (dB)
2400.00	V	-2.7	-19.7	65.6	74.0	-8.4	**45.9	54.0	-8.1
4804.00	V	6.3	-19.7	60.8	74.0	-13.2	**41.1	54.0	-12.9
7206.00	V	13.5	-19.7	60.4	74.0	-13.6	**40.7	54.0	-13.3
9608.00	V	13.2	-19.7	61.0	74.0	-13.0	**41.3	54.0	-12.7
12010.00	V	18.5	-19.7	59.8	74.0	-14.2	**40.1	54.0	-13.9
14412.00	V	19.2	-19.7	61.1	74.0	-12.9	**41.4	54.0	-12.6
16814.00	V	25.4	-19.7	62.3	74.0	-11.7	**42.6	54.0	-11.4
19216.00	V	27.3	-19.7	63.2	74.0	-10.8	**43.5	54.0	-10.5
21618.00	V	29.3	-19.7	61.7	74.0	-12.3	**42.0	54.0	-12.0
24020.00	V	32.1	-19.7	62.4	74.0	-11.6	**42.7	54.0	-11.3
26422.00	V	33.9	-19.7	62.3	74.0	-11.7	**42.6	54.0	-11.4

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(0.103) = -19.7dB.

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

Frequency (MHz)	Polarity (H/V)	Antenna Factor & Cable Loss (dB/m)	Duty-cycle correction (dB)	Field Strength at 3m – Peak (dBµV/m)	Limit at 3m – Peak (dBµV/m)	Margin - Peak (dB)	Field Strength at 3m – Average (dBµV/m)	Limit at 3m – Average (dBµV/m)	Margin - Average (dB)
4880.00	H	6.3	-19.7	60.2	74.0	-13.8	**40.5	54.0	-13.5
7320.00	H	13.5	-19.7	61.3	74.0	-12.7	**41.6	54.0	-12.4
9760.00	H	13.2	-19.7	62.0	74.0	-12.0	**42.3	54.0	-11.7
12200.00	H	18.5	-19.7	60.4	74.0	-13.6	**40.7	54.0	-13.3
14640.00	H	19.2	-19.7	60.5	74.0	-13.5	**40.8	54.0	-13.2
17080.00	H	25.4	-19.7	61.7	74.0	-12.3	**42.0	54.0	-12.0
19520.00	H	27.3	-19.7	61.7	74.0	-12.3	**42.0	54.0	-12.0
21960.00	H	29.3	-19.7	62.8	74.0	-11.2	**43.1	54.0	-10.9
24400.00	H	32.1	-19.7	62.6	74.0	-11.4	**42.9	54.0	-11.1
26840.00	H	33.9	-19.7	62.2	74.0	-11.8	**42.5	54.0	-11.5

Frequency (MHz)	Polarity (H/V)	Antenna Factor & Cable Loss (dB/m)	Duty-cycle correction (dB)	Field Strength at 3m – Peak (dBµV/m)	Limit at 3m – Peak (dBµV/m)	Margin - Peak (dB)	Field Strength at 3m – Average (dBµV/m)	Limit at 3m – Average (dBµV/m)	Margin - Average (dB)
4880.00	V	6.3	-19.7	60.9	74.0	-13.1	**41.2	54.0	-12.8
7320.00	V	13.5	-19.7	61.2	74.0	-12.8	**41.5	54.0	-12.5
9760.00	V	13.2	-19.7	62.6	74.0	-11.4	**42.9	54.0	-11.1
12200.00	V	18.5	-19.7	60.9	74.0	-13.1	**41.2	54.0	-12.8
14640.00	V	19.2	-19.7	60.5	74.0	-13.5	**40.8	54.0	-13.2
17080.00	V	25.4	-19.7	61.3	74.0	-12.7	**41.6	54.0	-12.4
19520.00	V	27.3	-19.7	62.1	74.0	-11.9	**42.4	54.0	-11.6
21960.00	V	29.3	-19.7	62.1	74.0	-11.9	**42.4	54.0	-11.6
24400.00	V	32.1	-19.7	62.3	74.0	-11.7	**42.6	54.0	-11.4
26840.00	V	33.9	-19.7	62.2	74.0	-11.8	**42.5	54.0	-11.5

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(0.103) = -19.7dB.

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

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TEST REPORT No: (5213)183-2024
Measurement Data
Test Result of (Transmission mode, Highest frequency): PASS

Frequency (MHz)	Polarity (H/V)	Antenna Factor & Cable Loss (dB/m)	Duty-cycle correction (dB)	Field Strength at 3m – Peak (dBµV/m)	Limit at 3m – Peak (dBµV/m)	Margin - Peak (dB)	Field Strength at 3m – Average (dBµV/m)	Limit at 3m – Average (dBµV/m)	Margin - Average (dB)
2483.50	H	-2.7	-19.7	53.8	74.0	-20.2	**34.1	54.0	-19.9
4960.00	H	6.3	-19.7	61.2	74.0	-12.8	**41.5	54.0	-12.5
7440.00	H	13.5	-19.7	62.5	74.0	-11.5	**42.8	54.0	-11.2
9920.00	H	13.2	-19.7	62.0	74.0	-12.0	**42.3	54.0	-11.7
12400.00	H	18.5	-19.7	60.5	74.0	-13.5	**40.8	54.0	-13.2
14880.00	H	19.2	-19.7	62.5	74.0	-11.5	**42.8	54.0	-11.2
17360.00	H	26.2	-19.7	62.4	74.0	-11.6	**42.7	54.0	-11.3
19840.00	H	27.3	-19.7	62.5	74.0	-11.5	**42.8	54.0	-11.2
22320.00	H	29.3	-19.7	62.2	74.0	-11.8	**42.5	54.0	-11.5
24800.00	H	32.1	-19.7	62.7	74.0	-11.3	**43.0	54.0	-11.0
27280.00	H	33.9	-19.7	62.2	74.0	-11.8	**42.5	54.0	-11.5

Frequency (MHz)	Polarity (H/V)	Antenna Factor & Cable Loss (dB/m)	Duty-cycle correction (dB)	Field Strength at 3m – Peak (dBµV/m)	Limit at 3m – Peak (dBµV/m)	Margin - Peak (dB)	Field Strength at 3m – Average (dBµV/m)	Limit at 3m – Average (dBµV/m)	Margin - Average (dB)
2483.50	V	-2.7	-19.7	60.7	74.0	-13.3	**41.0	54.0	-13.0
4960.00	V	6.3	-19.7	61.2	74.0	-12.8	**41.5	54.0	-12.5
7440.00	V	13.5	-19.7	62.1	74.0	-11.9	**42.4	54.0	-11.6
9920.00	V	13.2	-19.7	62.5	74.0	-11.5	**42.8	54.0	-11.2
12400.00	V	18.5	-19.7	60.6	74.0	-13.4	**40.9	54.0	-13.1
14880.00	V	19.2	-19.7	62.4	74.0	-11.6	**42.7	54.0	-11.3
17360.00	V	26.2	-19.7	62.1	74.0	-11.9	**42.4	54.0	-11.6
19840.00	V	27.3	-19.7	61.9	74.0	-12.1	**42.2	54.0	-11.8
22320.00	V	29.3	-19.7	62.8	74.0	-11.2	**43.1	54.0	-10.9
24800.00	V	32.1	-19.7	61.2	74.0	-12.8	**41.5	54.0	-12.5
27280.00	V	33.9	-19.7	62.6	74.0	-11.4	**42.9	54.0	-11.1

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(0.103) = -19.7dB.
Note: Field Strength includes Antenna Factor and Cable Loss.
Receiver setting: RBW = 1MHz
VBW = 1MHz

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TEST REPORT No: (5213)183-2024
Radiated Emissions (9kHz – 2.4GHz)

Test Requirement:	FCC Part 15 Section 15.209
Test Method:	ANSI C63.4
Test Date(s):	2013-08-05
Temperature:	30.0 °C
Humidity:	78.0 %
Atmospheric Pressure:	100.1 kPa
Mode of Operation:	On mode
Tested Voltage:	117Va.c., 60Hz

Limits for Radiated Emissions [FCC 47 CFR 15.209]:

Frequency Range [MHz]	Quasi-Peak Limits [μV/m]	Measurement Distance m
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above960	500	3

Measurement Data

Test Result of (On mode): PASS

Detection mode: Quasi-Peak

Frequency	Polarity (H/V)	Field Strength	Limit	Margin (dB)
Emissions detected are more than 20 dB below the limit line(s) in 9kHz to 30MHz				

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 200Hz
VBW = 200Hz

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Measurement Data

Test Result of (On mode): PASS

Detection mode: Quasi-Peak

Frequency (MHz)	Polarity (H/V)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
43.62	H	28.2	40.0	-11.8
77.24	H	24.2	40.0	-15.8
221.26	H	20.7	46.0	-25.3
360.80	H	23.9	46.0	-22.1
424.16	H	26.7	46.0	-19.3
493.22	H	26.9	46.0	-19.1

Frequency (MHz)	Polarity (H/V)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
43.62	V	28.4	40.0	-11.6
77.24	V	24.3	40.0	-15.7
221.26	V	20.9	46.0	-25.1
360.80	V	33.6	46.0	-12.4
424.16	V	27.5	46.0	-18.5
493.22	V	27.0	46.0	-19.0

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 120KHz
VBW = 120KHz

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TEST REPORT No: (5213)183-2024

Frequency range of Fundamental Emission

Test Requirement:	FCC 47 CFR 15.249
Test Method:	ANSI C63.4:2009 (Section 13.1.7)
Test Date(s):	2013-08-05
Temperature:	30.0 °C
Humidity:	78.0 %
Atmospheric Pressure:	100.1 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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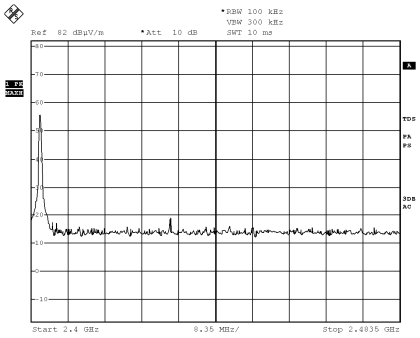
TEST REPORT No: (5213)183-2024

Measurement Data:

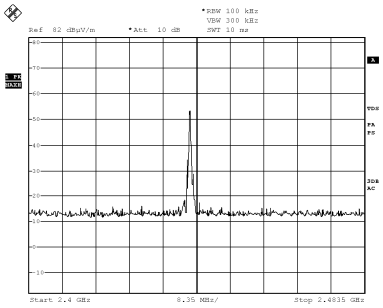
Test Result of Frequency Range of Fundamental Emission: PASS

Lowest Frequency – 2402.00MHz



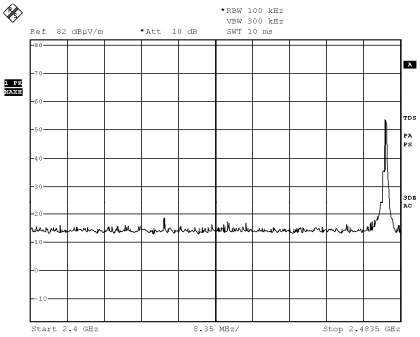
Date: 5.AUG.2013 09:41:35

Middle Frequency – 2440.00MHz



Date: 5.AUG.2013 09:40:07

Highest Frequency – 2480.00MHz



Date: 5.AUG.2013 09:26:36

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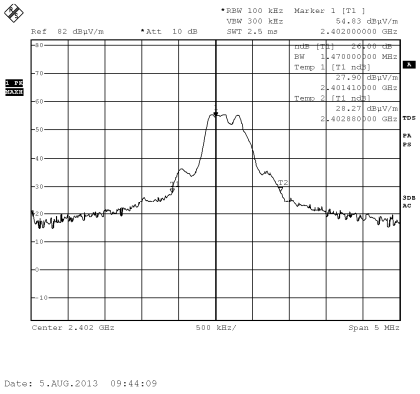
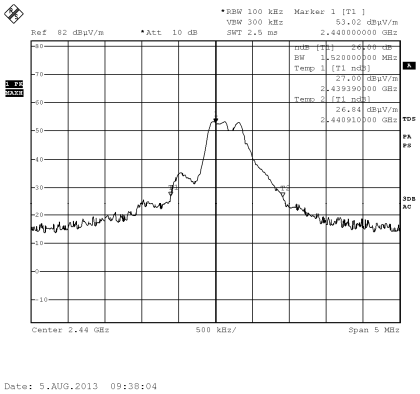
TEST REPORT No: (5213)183-2024
Measurement Data:

Test Result of 26dB Bandwidth of Fundamental Emission: PASS

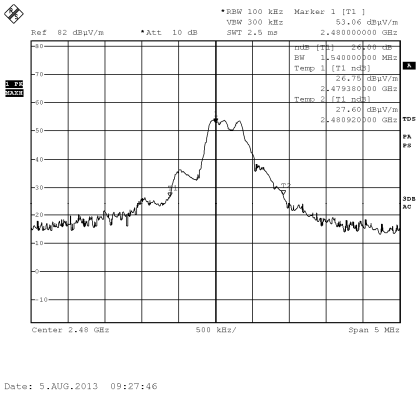
Lowest Frequency – 2402.00MHz



Middle Frequency – 2440.00MHz



Highest Frequency – 2480.00MHz



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Duty Cycle Correction During 100msec:

Each function key sends a different series of characters, but each packet period (4.64msec) never exceeds a series of 1 pulse (0.48msec). Assuming any combination of short and long pulses maybe obtained due to encoding the worst case transmit duty cycle would be considered (0.48) per 4.64msec = 10.3% duty cycle.

Remarks:

Duty Cycle Correction = 20Log(0.103) = -19.7dB

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

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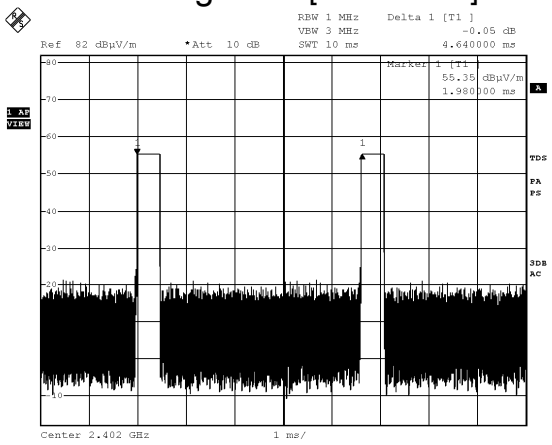
TEST REPORT No: (5213)183-2024

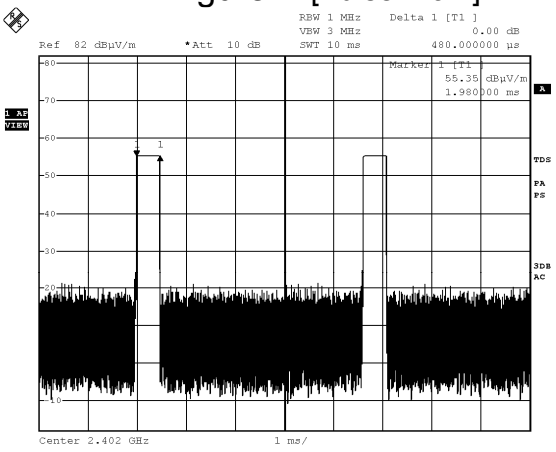
Measurement Data:

Figure A [Pulse Train]



Date: 5.AUG.2013 09:48:39

Figure B [Pulse Train]



Date: 5.AUG.2013 09:48:49

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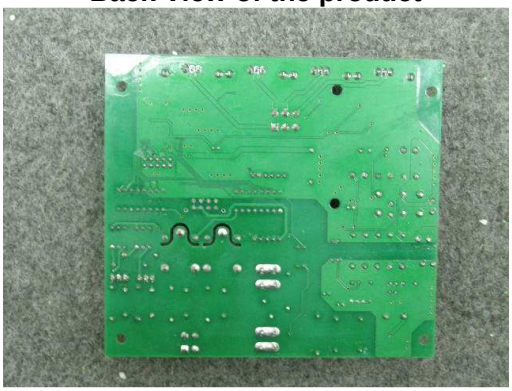
Photographs of EUT

Front View of the product

Back View of the product



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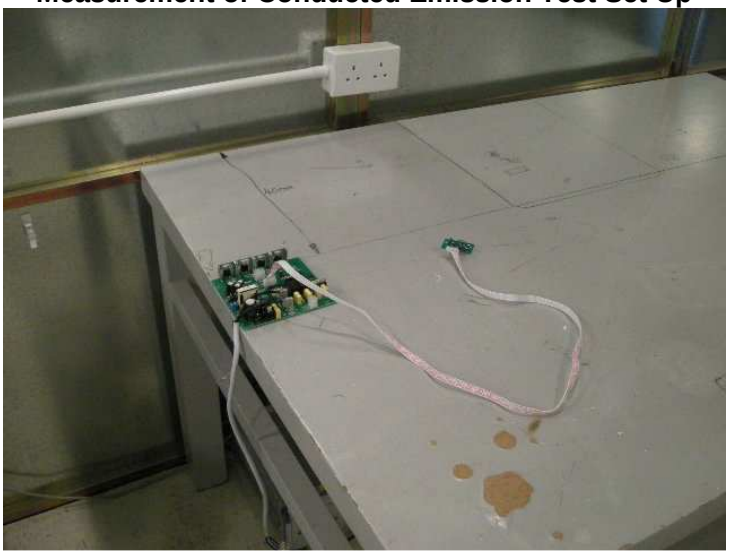
Measurement of Radiated Emission Test Set Up

Measurement of Conducted Emission Test Set Up



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

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