TEST REPORT No.: (5210)264-0484

TEST REPORT

To:	J. BRASCH CO.	To:	-
Attn:	Patricia Carlson	Attn:	-
Address:	140 N. 8th Street, Suite 430, Lincoln, NE 68508, United States	Address:	-
Fax:	--	Fax:	-
E-mail:	--	E-mail:	-
Folder No.:	ECL-10SE176ETHS-B-A		

Factory name:	--
Location:	--
Product:	SafePresence Hook-Up Wireless Link MODEL: TXB

Sample No:	HK100917/030
Test date:	October 5, 2010 To October 6, 2010
Test Requested:	FCC Part 15 - 2008
Test Method:	ANSI C63.4 - 2003
FCC ID:	YJZ73200675

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 28, 2010	Date: October 28, 2010

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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	06-SEP-2011
BILOG ANTENNA	SCHAFFNER	CBL6112D	25229	02-AUG-2011
OPEN AREA TEST SITE	BVCPS	N/A	N/A	05-JULY-2011
ANECHOIC CHAMBER	ALBATROSS	M-CDC	80374004499B	06-JULY-2011
HORN ANTENNA	SCHWARZBECK	BBHA9120D	9120D-692	20-JULY-2011
PREAMPLIFIER	SCHWARZBECK	BBV9718	9718-152	26-JULY-2011
COAXIAL CABLE	SUHNER	N/A	N/A	07-DEC-2010

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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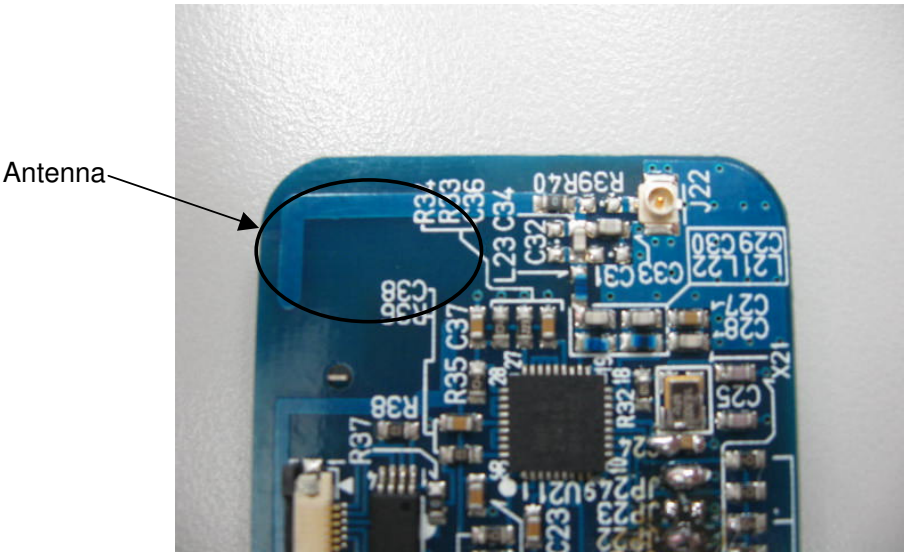
Equipment Under Test [EUT]
Description of Sample:

Model Name:	SafePresence Hook-Up Wireless Link
Model Number:	TXB
Additional Model Number:	TXF
Additional Model Information:	Declare the Circuit, PCB layout and Electrical parts of the products are identical to the basic model, except the connector and connection device. TXB: Transmitter for Bed Sensor TXF: Transmitter for Floor Mat
Rating:	3Vd.c ("CR2032" size battery x 1)

Description of EUT Operation:
The Equipment Under Test (EUT) is a J. BRASCH CO. of Remote Control Transmitter. It is a one-connector transmitter and operating at 2410MHz to 2466MHz. The connector is connecting with Bed Sensor and the EUT continues to transmit while sensor is being pressed. It is using FHSS, total 8 channels, and Modulation by IC, type is pulse modulation. The lowest, middle & highest frequency had tested and the results are shown in the report.
The transmitter has different control:

1. Connector – Sensor detection, control transmission on / off

Antenna Requirement (Section 15.203)
The EUT is use of a permanently antenna. It is soldered on the PCB. 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

Radiated Emissions (Fundamental)

Test Requirement:	FCC Part 15 Section 15.249
Test Method:	ANSI C63.4
Test Date(s):	2010-10-06
Temperature:	24.0 °C
Humidity:	71.0 %
Atmospheric Pressure:	100.6 kPa
Mode of Operation:	Transmission mode
Tested Voltage	3Vd.c. ("CR2032" size battery x 1)

Test Procedure:

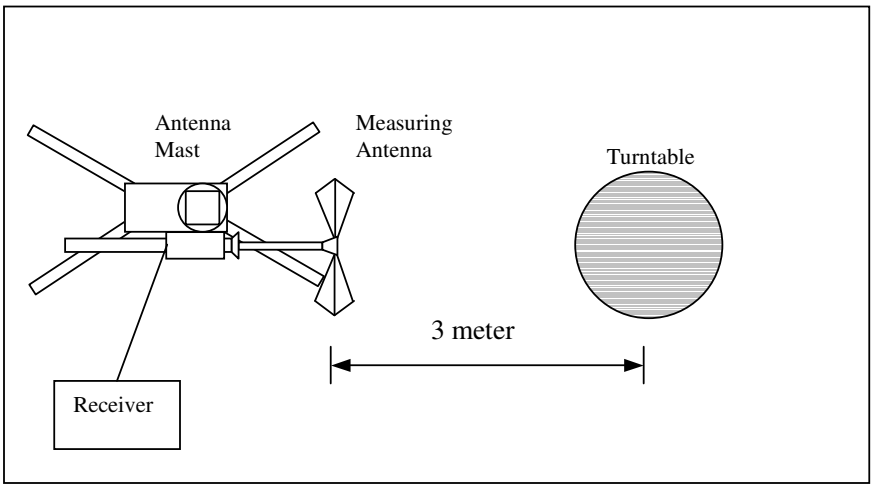
Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2003.

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.

For below 30MHz, a loop antenna with its vertical plane is place 3m from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. And the centre of the loop shall be 1m above the ground.

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 (Quasi-Peak) [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) and degree	EUT Orientation	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
2410.05	V	Front side	-3.2	85.2	114.0	-28.8

Detection mode: # Average

Frequency (MHz)	Polarity (H/V) and degree	EUT Orientation	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBµV/m)	Limit at 3m (dBµV/m)	Margin (dB)
2410.05	V	Front side	-3.2	**64.3	94.0	-29.7

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(0.09) =-20.9dB

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) and degree	EUT Orientation	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
2434.03	V	Front side	-3.3	77.2	114.0	-36.8

Detection mode: # Average

Frequency (MHz)	Polarity (H/V) and degree	EUT Orientation	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
2434.03	V	Front side	-3.3	**56.3	94.0	-37.7

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

Detection mode: Peak

Frequency (MHz)	Polarity (H/V) and degree	EUT Orientation	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
2466.03	V	Front side	-3.1	79.2	114.0	-34.8

Detection mode: # Average

Frequency (MHz)	Polarity (H/V) and degree	EUT Orientation	Antenna Factor and Cable Loss (dB/m)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
2466.03	V	Front side	-3.1	**58.3	94.0	-35.7

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(0.09) =-20.9dB

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz
VBW = 1MHz

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TEST REPORT No.: (5210)264-0484

Radiated Emissions (Spurious Emission)

Test Requirement:	FCC Part 15 Section 15.249
Test Method:	ANSI C63.4
Test Date(s):	2010-10-06
Temperature:	24.0 °C
Humidity:	71.0 %
Atmospheric Pressure:	100.6 kPa
Mode of Operation:	Transmission mode
Tested Voltage	3Vd.c. ("CR2032" size battery x 1)

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)
4820.10	V	2.9	63.1	74.0	-10.9
7230.15	H	9.8	47.4	74.0	-26.6
9640.20	H	11.1	49.7	74.0	-24.3
12050.25	V	16.5	52.9	74.0	-21.1
14460.30	H	23.4	59.0	74.0	-15.0
16870.35	V	21.8	61.2	74.0	-12.8

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: # 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)
4820.10	V	2.9	**42.2	54.0	-11.8
7230.15	H	9.8	**26.5	54.0	-27.5
9640.20	H	11.1	**28.8	54.0	-25.2
12050.25	V	16.5	**32.0	54.0	-22.0
14460.30	H	23.4	**38.1	54.0	-15.9
16870.35	V	21.8	**40.3	54.0	-13.7

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(0.09) =-20.9dB

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)
4868.06	V	2.9	64.5	74.0	-9.5
7302.09	H	10.7	47.6	74.0	-26.4
9736.12	H	11.4	49.5	74.0	-24.5
12170.15	V	16.5	54.2	74.0	-19.8
14604.18	H	23.5	57.9	74.0	-16.1
17038.21	V	22.1	61.0	74.0	-13.0

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)
4868.06	V	2.9	**43.6	54.0	-10.4
7302.09	H	10.7	**26.7	54.0	-27.3
9736.12	H	11.4	**28.6	54.0	-25.4
12170.15	V	16.5	**33.3	54.0	-20.7
14604.18	H	23.5	**37.0	54.0	-17.0
17038.21	V	22.1	**40.1	54.0	-13.9

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(0.09) =-20.9dB

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz
VBW = 1MHz

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TEST REPORT No.: (5210)264-0484

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)
4932.06	V	3.0	58.5	74.0	-15.5
7398.09	H	10.7	48.0	74.0	-26.0
9864.12	H	12.0	50.7	74.0	-23.3
12330.15	H	14.8	51.6	74.0	-22.4
14796.18	H	21.6	60.0	74.0	-14.0
17262.21	V	24.6	61.5	74.0	-12.5

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)
4932.06	V	3.0	**37.6	54.0	-16.4
7398.09	H	10.7	**27.1	54.0	-26.9
9864.12	H	12.0	**29.8	54.0	-24.2
12330.15	H	14.8	**30.7	54.0	-23.3
14796.18	H	21.6	**39.1	54.0	-14.9
17262.21	V	24.6	**40.6	54.0	-13.4

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(0.09) =-20.9dB

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 1MHz
VBW = 1MHz

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TEST REPORT No.: (5210)264-0484

Radiated Emissions (30MHz – 1GHz)

Test Requirement:	FCC Part 15 Section 15.209
Test Method:	ANSI C63.4
Test Date(s):	2010-10-06
Temperature:	24.0 °C
Humidity:	71.0 %
Atmospheric Pressure:	100.6 kPa
Mode of Operation:	Transmission mode
Tested Voltage	3Vd.c. ("CR2032" size battery x 1)

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): PASS

Detection mode: Quasi-Peak

Frequency (MHz)	Polarity (H/V)	Field Strength at 3m (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
37.28	H	23.6	40.0	-16.4
119.48	V	20.9	43.5	-22.6
212.80	V	21.5	43.5	-22.0
298.12	H	23.8	46.0	-22.2
435.20	V	28.1	46.0	-17.9
670.32	V	31.2	46.0	-14.8

Note: Field Strength includes Antenna Factor and Cable Loss.

Receiver setting: RBW = 120KHz
VBW = 120KHz

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TEST REPORT No.: (5210)264-0484

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):	2010-10-05
Temperature:	24.0 °C
Humidity:	71.0 %
Atmospheric Pressure:	100.6 kPa
Mode of Operation:	Transmission mode
Tested Voltage	3Vd.c. (“CR2032” size battery x 1)

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]
2410.05 – 2466.03	2400 – 2483.5

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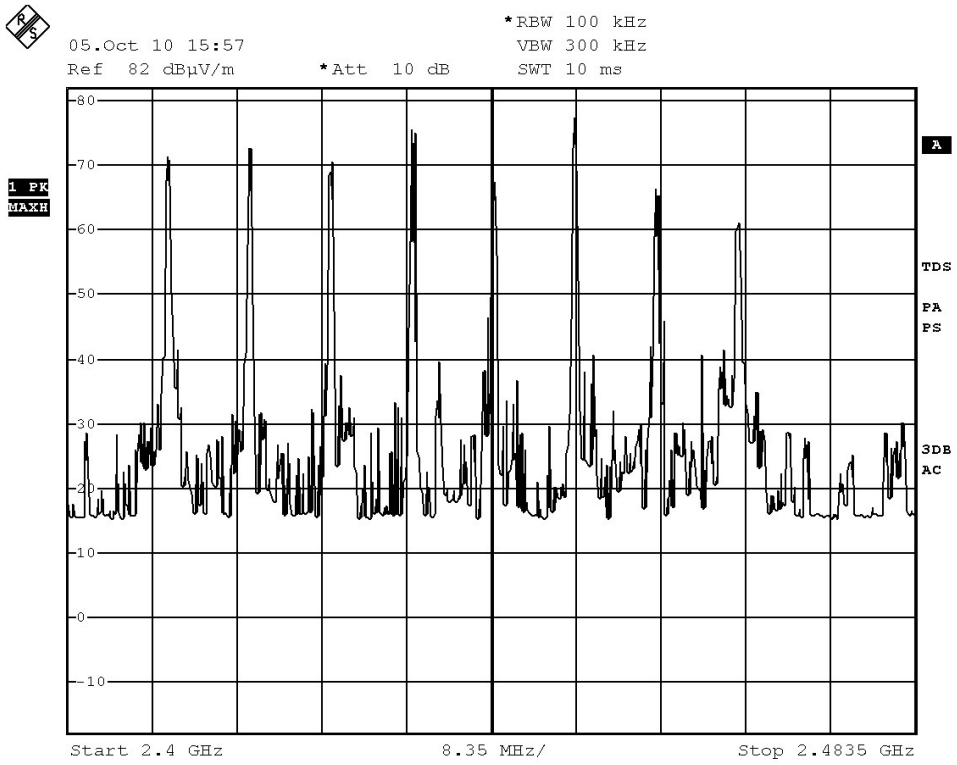
Measurement Data :

Test Result of Frequency Range of Fundamental Emission: PASS



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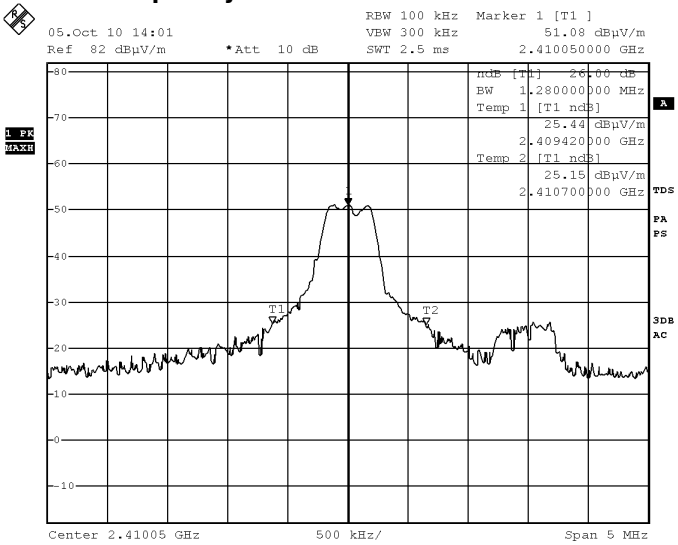
TEST REPORT No.: (5210)264-0484
Measurement Data :

Test Result of 26dB bandwidth of Fundamental Emission: PASS

Lowest frequency:



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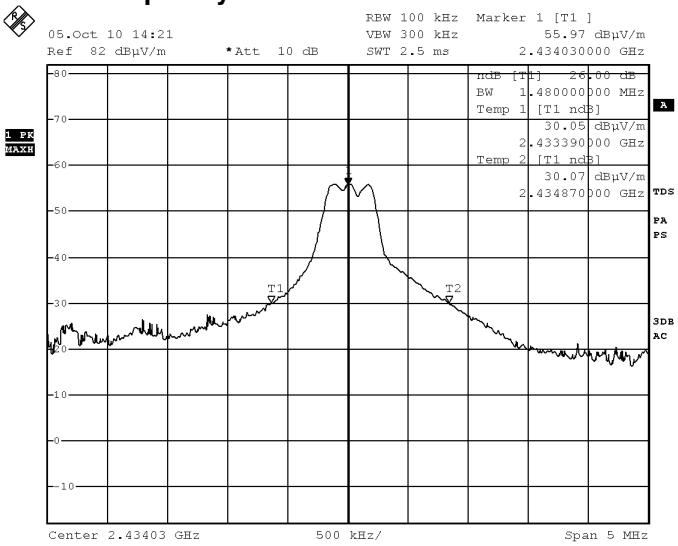
Middle frequency:



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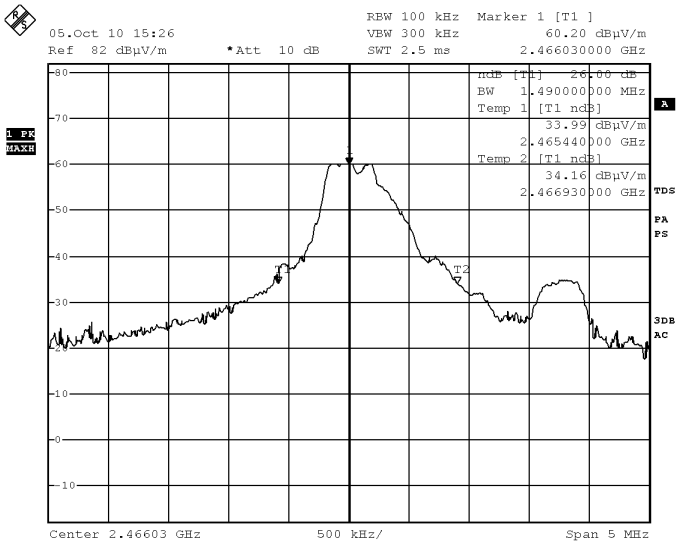
TEST REPORT No.: (5210)264-0484
Measurement Data :

Test Result of 26dB bandwidth of Fundamental Emission: PASS

Highest frequency:



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Duty Cycle Correction During 100msec:

Each function key sends a different series of characters, but each packet period (100msec) never exceeds a series of 9 pulses (1.0msec). Assuming any combination of short or long pulses may be obtained due to encoding the worst case transmit duty cycle would be considered (9*1.0)msec per 100msec=9% duty cycle. Figure A to C show the characteristics of the pulse train for one of these functions.

Remarks:

Duty Cycle Correction = 20Log(0.09) =-20.9dB

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

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Figure A [Pulse Train of 100ms – Lowest frequency]

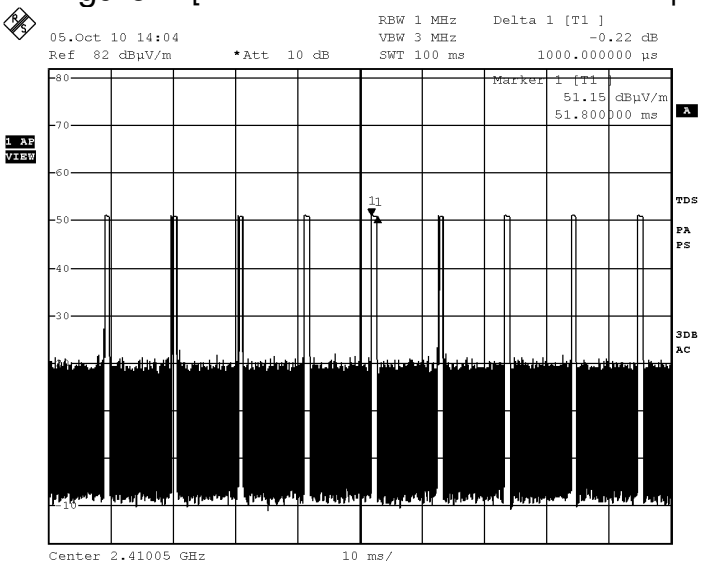

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Figure B [Pulse Train of 100ms – Middle frequency]

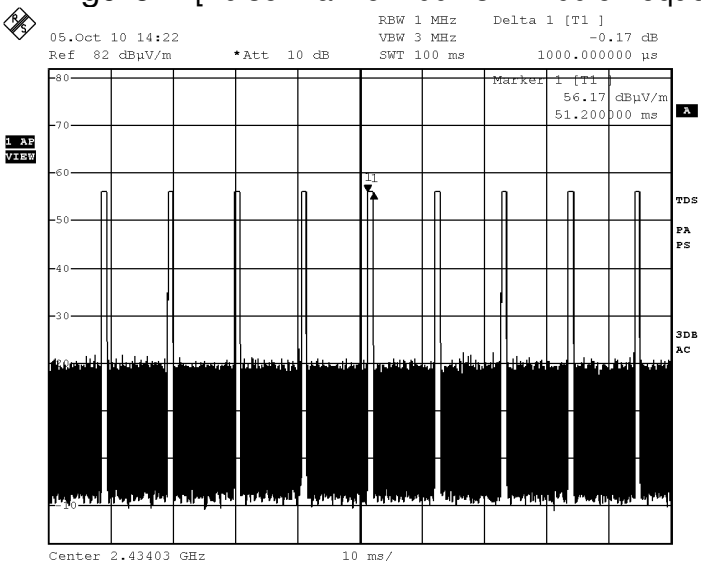

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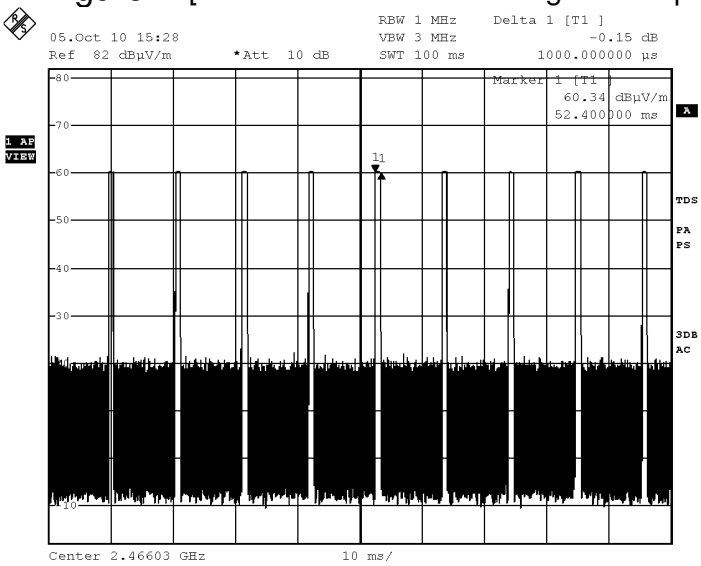
Figure A [Pulse Train of 100ms – Highest frequency]



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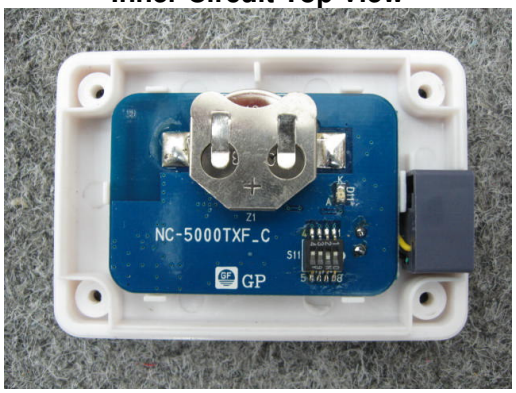
Photographs of EUT

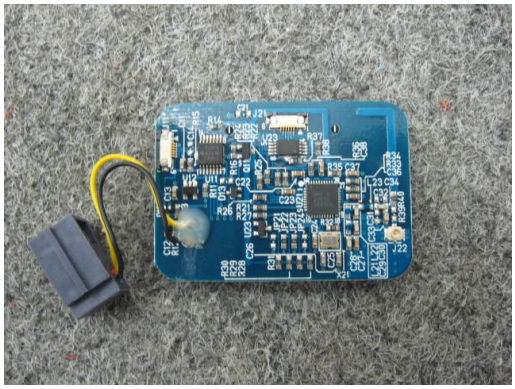
Front View of the product

Rear View of the product

Inner Circuit Top View



Inner Circuit Bottom View



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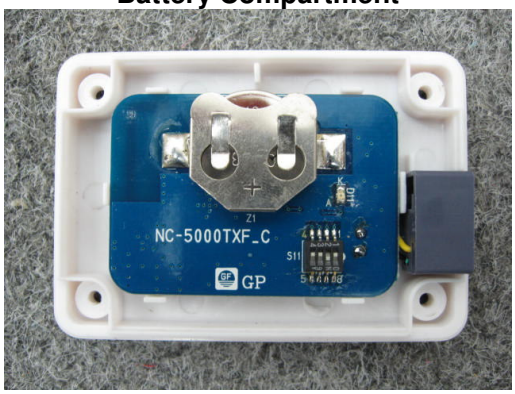
Photographs of EUT

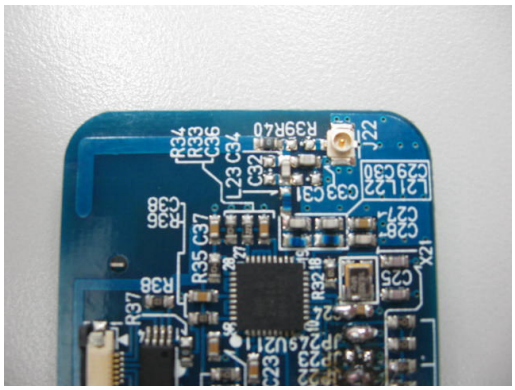
Battery Compartment



Battery Cover

Internal View of the product

Antenna



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Measurement of Radiated Emission Test Set Up

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

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