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No. : HM161972

Applicant (WIC020): Winbel Co Ltd

9C Fully Industrial Building, 6 Tsun Yip Lane, Kwun Tong

Hong Kong

Manufacturer: Winbel Co Ltd

9C Fully Industrial Building, 6 Tsun Yip Lane, Kwun Tong

Hong Kong

Description of Samples: Product: Co Co Call Eliminator

Brand Name: Co Co Call Model Number: WM109U2

FCC ID: WDZCOCOCALL200

Date Samples Received: 2008-06-17, 2008-08-21

Date Tested: 2008-06-19 to 2008-08-25

Investigation Requested: Perform ElectroMagnetic Interference measurement in

accordance with FCC 47CFR [Codes of Federal Regulations] Part 15: 2007 and ANSI C63.4:2003 for FCC Certification.

Conclusions: The submitted product COMPLIED with the requirements of

Federal Communications Commission [FCC] Rules and Regulations Part 15. The tests were performed in accordance with the standards described above and on Section 2.2 in this

Test Report.

Remarks: ----

Dr. LEE Kam Chuen, ElectroMagnetic Compatibility Department For and on behalf of

The Hong Kong Standards and Testing Centre Ltd.



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1.0 General Details

1.1 Test Laboratory

The Hong Kong Standards and Testing Centre Ltd. EMC Laboratory 10 Dai Wang Street, Taipo Industrial Estate New Territories, Hong Kong

Telephone: 852 2666 1888 Fax: 852 2664 4353

1.2 Applicant Details Applicant

Winbel Co Ltd 9C Fully Industrial Building, 6 Tsun Yip Lane, Kwun Tong Hong Kong

Manufacturer

Winbel Co Ltd 9C Fully Industrial Building, 6 Tsun Yip Lane, Kwun Tong Hong Kong



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1.3 Equipment Under Test [EUT] Description of Sample

Product: Co Co Call Eliminator

Manufacturer: Winbel Co Ltd Brand Name: Co Co Call Model Number: WM109U2

Rating: 3Vd.c. ("AA" size battery x 2)

1.3.1 Description of EUT Operation

The Equipment Under Test (EUT) is a Winbel Co Ltd., Co Co Call Eliminator. The EUT continues to transmit while button is being pressed. It is button transmitter, Modulation by IC; and the type is pulse modulation.

1.4 Date of Order

2008-06-17, 2008-08-21

1.5 Submitted Sample(s):

2 Samples

1.6 Test Duration

2008-06-19 to 2008-08-25

1.7 Country of Origin

China



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2.0 <u>Technical Details</u>

2.1 Investigations Requested

Perform ElectroMagnetic Interference measurement in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15 2007 and ANSI C63.4:2003 for FCC Certification.

2.2 Test Standards and Results Summary Tables

EMISSION Results Summary							
Test Condition	Test Requirement	Test Method	Class /	Test	Result		
			Severity	Pass	Failed		
Field Strength of Fundamental Emissions & Spurious Emissions	FCC 47CFR 15.231a	ANSI C63.4:2003	N/A				
Radiated Emissions, 30MHz to 1GHz	FCC 47CFR 15.209	ANSI C63.4:2003	N/A	\boxtimes			

Note: N/A - Not Applicable



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3.0 Test Results

3.1 Emission

3.1.1 Radiated Emissions (30 – 1000MHz)

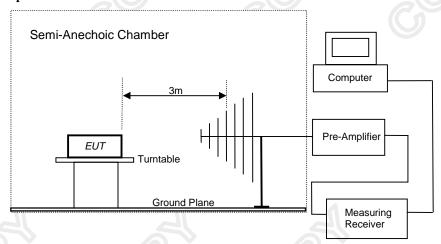
Test Requirement: FCC 47CFR 15.231a
Test Method: ANSI C63.4:2003
Test Date: 2008-08-25
Mode of Operation: Tx mode

Test Method:

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

*: Semi-anechoic chamber located on the G/F of The Hong Kong Standards and Testing Centre Ltd. with a metal ground plane filed with the FCC pursuant to section 2.948 of the FCC rules, with Registration Number: 607756.

Test Setup:





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Limits for Field Strength of Fundamental Emissions [FCC 47CFR 15.231a]:

Frequency Range of	Field Strength of	Field Strength of
Fundamental	Fundamental Emission	Spurious Emission
	[Average]	[Average]
[MHz]	$[\mu V/m]$	$[\mu V/m]$
40.66-40.70	2,250	225
70-130	1,250	125
130-174	1,250 to 3,750 *	125 to 375 *
174-260	3,750	375
260-470	3,750 to 12,500 *	375 to 1,250 *
Above 470	12,500	1,250

Where F is the frequency in MHz, the formulas for calculating the maximum permitted fundamental field strengths are as follows: for the band 130-174 MHz, μ V/m at 3 meters=56.81818(F)-6136.3636; for the band 260-470 MHz, μ V/m at 3 meters =41.6667(F)-7083.3333. The maximum permissible unwanted emission level is 20dB below the maximum permitted fundamental level.

Results:

Field Strength of Fundamental Emissions								
	Peak Value							
Frequency	Frequency Measured Correction Field Field Limit E-Field							
	Level @3m	Factor	Strength	Strength	@3m	Polarity		
MHz	$dB\mu V$	dB/m	dBμV/m	μV/m	μV/m			
315.00	65.1	16.1	81.2	11481.5	60,416.8	Horizontal		

Field Strength of Fundamental Emissions								
Average Value								
Frequency Measured Correction Field Field Limit E-Field								
	Level @3m	Factor	Strength	Strength	@3m	Polarity		
MHz	$dB\mu V$	dB/m	dBμV/m	μV/m	μV/m			
315.00	58.7	16.1	74.8	5495.4	6,041.7	Horizontal		



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Results:

Field Strength of Spurious Emissions Average Value								
Frequency	Measured Level @3m	Correction Factor	Field Strength	Field Strength	Limit @3m	E-Field Polarity		
MHz	$dB\mu V$	dB/m	_dBμV/m	μV/m	μV/m)		
629.90	7.6	23.1	30.7	34.3	6,041.7	Horizontal		
630.00	< 1.0	29.1	< 30.1	< 32.0	6,041.7	Vertical		
945.10	6.8	26.5	33.3	46.2	6,041.7	Horizontal		
1260.00	< 1.0	32.2	< 33.2	< 45.7	6,041.7	Vertical		
+ 1575.00	< 1.0	38.8	< 39.8	< 97.7	5,000.0	Vertical		
1890.00	< 1.0	17.4	< 18.4	< 8.3	6,041.7	Vertical		
+ 2205.00	< 1.0	17.2	< 18.2	< 8.1	5,000.0	Vertical		
2520.00	< 1.0	18.8	< 19.8	< 9.8	6,041.7	Vertical		
+ 2835.00	< 1.0	19.7	< 20.7	< 10.8	5,000.0	Vertical		
3150.00	< 1.0	20.6	< 21.6	< 12.0	6,041.7	Vertical		

Remarks:

*: Adjusted by Duty Cycle = -6.4dB

FCC Limit for Average Measurement = $41.6667(315MHz)-7083.333=6,041.6772\mu V/m$

+: Denotes restricted band of operation.

Measurements were made using a peak detector. Any emission less than 1000 MHz and falling within the restricted bands of FCC Rules Part 15 Section 15.205 were not adjusted for averaging and the limits of FCC Rules Part 15 Section 15.209 were applied.

Correction Factor includes Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty : 30MHz to 1GHz 5.2dB



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Limits for Radiated Emissions [FCC 47 CFR 15.209]:

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

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

Results:

Radiated Emissions							
			Quasi-Peak				
Frequency	Frequency Measured Correction Field Field Limit @3m E-Field						
	Level @3m Factor Strength Strength Polarity						
MHz	$dB\mu V$	dB/m	dBμV/m	μV/m	μV/m		
Emissions detected are more than 20 dB below the FCC Limits							

Remarks:

No further spurious emissions found between lowest internal frequency and 30MHz

Correction Factor includes Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty : 30MHz to 1GHz 5.2dB



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3.2 20dB Bandwidth of Fundamental Emission

Test Requirement: FCC 47 CFR 15.231a

Test Method: ANSI C63.4:2003 (Section 13.1.7)

Test Date: 2007-08-12 Mode of Operation: On mode

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.

Test Setup:

As Test Setup of clause 3.1.1 in this test report.



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Limits for 20 dB Bandwidth of Fundamental Emission:

Frequency Range	20dB Bandwidth	FCC Limits *
[MHz]	[KHz]	[KHz]
314.98	126.25	787.45

*: FCC Limit for Bandwidth measurement = (0.25%)(Center Frequency) =(0.0025)(314.98)

= 787.45 KHz

20dB Bandwidth of Fundamental Emission Marker 1 [T1 ndB] 30 kHz RBW RF Att 0 dB Ref Lvl ndB 20.00 dB VBW 30 kHz 92 dB**æ**V BW 126.25250501 kHz SWT 5 ms Unit dBæV ▼1 [T1] 61.60 dBæV 314.98104208 MHz .00 dB 8 (BW 126.25250501 kHz ∇_{T} 42.78 dBæv [T1] 7 (314.90488978 MHz ∇_{T2} [T1] 65 dBæ1 41 03114228 MHz 1VIEW 4 (Why happy 30 www.Mahhhhamanal 100 kHz/ Span 1 MHz Center 314.96 MHz

18:39:06

12.AUG.2008

Date:



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Appendix A

List of Measurement Equipment

Radiated Emission

Ruducu Elinosion								
EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL	DUE CAL		
EM020	HORN ANTENNA	EMCO	3115	4032	2006/07/11	2009/07/11		
EM215	MULTIDEVICE CONTROLER	EMCO	2090	00024676	N/A	N/A		
EM216	MINI MAST SYSTEM	EMCO	2075	00026842	N/A	N/A		
EM217	ELECTRIC POWERED TURNTABLE	EMCO	2088	00029144	N/A	N/A		
EM218	ANECHOIC CHAMBER	ETS-Lindgren	FACT-3		2006/05/02	2009/05/02		
EM174	BICONILOG ANTENNA	EMCO	3142C	00029071	2008/01/24	2009/01/24		
EM181	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESIB7	100072	2008/06/16	2009/06/16		
EM022	LOOP ANTENNA	EMCO	6502	1189-2424	2006/07/26	2009/07/26		

Line Conducted

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL	DUE CAL
EM197	LISN	EMCO	4825/2	1193	2007/10/30	2009/10/30
EM181	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESIB7	100072	2008/06/16	2009/06/16
EM154	SHIELDING ROOM	SIEMENS MATSUSHITA COMPONENTS	N/A	803-740-057- 99A	2008/01/23	2009/01/23

Remarks:-

CM Corrective Maintenance

N/A Not Applicable or Not Available

TBD To Be Determined



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Appendix B

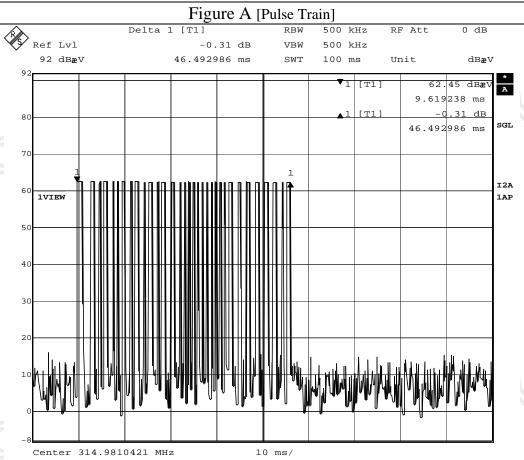
Duty Cycle Correction During 100msec

Each function key sends a different series of characters, but each packet period (46.5msec) never exceeds a series of 15 long (0.962msec) or 18 short (0.441msec) pulses. Assuming any combination of short and long pulses may be obtained due to encoding the worst case transmit duty cycle would be considered (15x0.962)+(18x0.441)msec per 46.5msec=48.1% duty cycle. Figure A through D show the characteristics of the pulses train for one of these functions.

Remarks:

Duty Cycle Correction = 20Log(0.481) =-6.4dB

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



18:41:37

12.AUG.2008



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12.AUG.2008 18:40:09

Figure B [Transmission after activation] Delta 1 [T1] RBW 100 kHz RF Att 0 dB Ref Lvl -0.94 dB VBW 100 kHz 92 dBæV 565.130261 ms SWT 6 s Unit dB**æ**V ▼1 [T1] 63.69 dBæv 301.601<mark>202 ms</mark> [T1] .94 dB 565.130261 ms 70 1 I2A 60 1AP 50 40 30 20 Center 314.9810421 MHz 600 ms/



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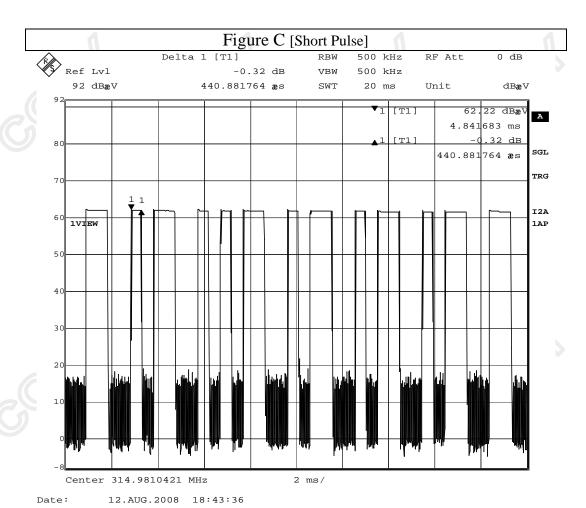
12.AUG.2008 18:43:10

Figure B [Long Pulse] Delta 1 [T1] RBW 500 kHz RF Att 0 dB Ref Lvl 500 kHz -0.32 dB VBW 92 dB**æ**V 961.923848 æs SWT 20 ms Unit dBæV [T1] 62.22 dBæ 2.881764 ms .32 dB [T1] 961.923848 æs TRG 70 I2A 1AP 50 4(30 20 Center 314.9810421 MHz 2 ms/



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Appendix C

Periodic Operation [FCC 47CFR 15.231(a2)]

According to FCC 47CFR15.231 (a2). A transmitter automatically activated must automatically deactivate within not more than 5 seconds of being released. The EUT ceases transmission almost immediately upon being released and appears to finish the current packet being transmitted. Therefore the longest period of time the transmitter should take to deactivate is a packet length.



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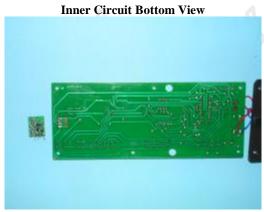
Appendix D

Photographs of EUT







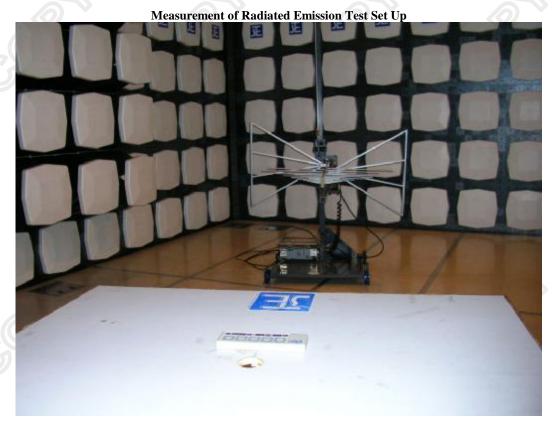




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Photographs of EUT



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