

ATTACHMENT 1 – CFR 15.235 (a) FUNDAMENTAL MEASUREMENT RESULTS

CLIENT:	Boxer Toys Co., Ltd.	TEST REFERENCE:	CFR 47 Part 15 Section 15.235 (a)
EUT MODEL:	SW-2098	PRODUCT:	Wrist Watch Walkie Talkie
SERIAL NO.:	N/A	EUT DESIGNATION:	Home Use
TEMPERATURE:	29° C	HUMIDITY:	87%
ATM PRESSURE:	1017 Mbar	GROUNDING:	Battery Powered
TESTED BY:	Paul F. Chen	DATE OF TEST:	09/31/99
SETUP METHOD:	ANSI C63.4: 1992, CISPR 16-1:1993		
TEST PROCEDURE:	The EUT is set up according to the guidelines of ANSI C63.4:1992 for radiated emissions. An EMI receiver peak scan is made at the frequency measurement range (pre-scan) in an Anechoic chamber. Signal discrimination is then performed and the significant peaks marked. These peaks are then average in the frequency range of 30 MHz to 1GHz at OATS. The following data lists the significant emission frequencies, measured levels, correction factors (including cable and antenna correction factors), and the corrected readings against the limits. Explanation of the Correction Factor is given as follows: FS= RA + AF + CF - AG Where: FS = Field Strength RA = Receiver Amplitude AF = Antenna Factor CF = Cable Attenuation Factor AG = Amplifier Gain		
TESTED RANGE:	49.85MHz		
TEST VOLTAGE:	9 Volts Battery (<u>before test : 9.13 Volts; after test 9.02 Volts</u>)		
RESULTS:	The EUT meets the requirements of test reference for Fundamental emission measurement on horizontal polarization by 14.7dB at fundamental frequency 49.85MHz. The test results relate only to the equipment under test provided by client.		
CHANGES OR MODIFICATIONS:	There are modifications installed by EMC Compliance Management Group test personnel. Please see attached photo as follows.		
M. UNCERTAINTY:	Freq. $\pm 2 \times 10^{-7}$ x Center Freq., Amp ± 2.6 dB		

Frequency [MHz]	Antenna Polarization [V/H]	AVE Corrected Reading [dBμV/m]	Delta, AVE [dB]	3 Meters Limits (10,000μV/m) [dBμV/m]	Correction Factors [dB/m]
Set-up/Configuration: The antenna of EUT was setup in vertical position.					
49.85	V	63.2	-16.8	80.0	12.9
49.85	H	37.0	--43.0	80.0	12.9
Set-up/Configuration: The antenna of EUT was setup in horizontal position.					
49.85	V	60.4	--19.6	80.0	12.9
49.85	H	65.3	-14.7	80.0	12.9
Note: According to CFR 15.35. All readings are AVERAGED unless stated otherwise, using an IF bandwidth of 120kHz, with a 30 ms sweep time. A video filter was not used.					

Test Equipment	Manufacturer/ Model	Serial No.	Last Cal.	Cal. Due Date
EMI Receiver	HP 85462A	3650A00363	05/21/99	05/21/00
RF Filter	HP 85460A	3704A00349	05/21/99	05/21/00
Antenna	CHASE CBL6112A	2274	11/15/98	11/15/99
Note: All testing were performed using internationally recognized standards. All test instruments were calibrated and traceable to the National Institute of Standards and Technology (NIST).				

SIGNED: 

REVIEWED: 

ATTACHMENT 2 – CFR 15.235 (b) HARMONICS MEASUREMENT RESULTS

CLIENT:	Boxer Toys Co., Ltd.	TEST REFERENCE:	CFR15.235(b)
EUT MODEL:	SW-2098	PRODUCT:	Wrist Watch Walkie Talkie
SERIAL NO.:	N/A	EUT DESIGNATION:	Home Use
TEMPERATURE:	29° C	HUMIDITY:	87%
ATM PRESSURE:	1017 Mbar	GROUNDING:	Battery Powered
TESTED BY:	Paul F. Chen	DATE OF TEST:	09/31/99
SETUP METHOD:	ANSI C63.4: 1992, CISPR 16-1:1993		
TEST PROCEDURE:	The EUT is set up according to the guidelines of ANSI C63.4:1992 for radiated emissions. An EMI receiver peak scan is made at the frequency measurement range (pre-scan) in an Anechoic chamber. Signal discrimination is then performed and the significant peaks marked. These peaks are then average in the frequency range of 30 MHz to 1GHz at OATS. The following data lists the significant emission frequencies, measured levels, correction factors (including cable and antenna correction factors), and the corrected readings against the limits. Explanation of the Correction Factor is given as follows: FS= RA + AF + CF - AG Where: FS = Field Strength RA = Receiver Amplitude AF = Antenna Factor CF = Cable Attenuation Factor AG = Amplifier Gain		
TESTED RANGE:	30MHz to 49.84MHz and 49.86 to 1,000MHz according to CFR15.235(b)		
TEST VOLTAGE:	9 Volts Battery (<u>before test : 9.1 Volts; after test 9.02 Volts</u>)		
RESULTS:	The EUT meet the requirements of test reference for Radiated Emissions on horizontal polarization by 9.0 dB at 398.8317MHz. The test results relate only to the equipment under test provided by client.		
CHANGES OR MODIFICATIONS:	There are modifications installed by EMC Compliance Management Group test personnel. Please see attached photo as followed.		
M. UNCERTAINTY:	Freq. $\pm 2 \times 10^{-7}$ x Center Freq., Amp ± 2.6 dB		

Frequency [MHz]	Antenna Polarization [V/H]	Corrected Reading [dBµV/m]	Delta, QP [dB]	3 Meters Limits (CFR15.235b) [dBµV/m]	Correction Factors [dB/m]
Set-up/Configuration: The RX/TX antenna of EUT was tested at both vertical and horizontal polarization.					
398.8317	H	45.0	-9.0	54.0	19.9
398.8317	V	44.9	-9.1	54.0	19.9
797.6561	V	44.5	-9.5	54.0	26.5
299.1236	V	44.5	-9.5	54.0	16.2
847.3137	H	43.2	-10.8	54.0	27.2
847.5000	V	43.0	-11.0	54.0	27.2
797.6663	H	41.1	-12.9	54.0	26.5
348.9725	V	37.7	-16.3	54.0	18.1
299.1182	H	37.6	-16.4	54.0	16.2
299.1224	H	37.4	-16.6	54.0	16.2
448.6635	V	36.7	-17.3	54.0	20.8
648.0861	V	36.0	-18.0	54.0	24.3
548.3803	V	31.7	-22.3	54.0	22.7
Note: All readings are Quasi-Peaked unless stated otherwise, using an IF bandwidth of 120kHz, with a 30 ms sweep time. A video filter was not used.					

Test Equipment	Manufacturer/ Model	Serial No.	Last Cal.	Cal. Due Date
EMI Receiver	HP 85462A	3650A00363	05/21/99	05/21/00
RF Filter	HP 85460A	3704A00349	05/21/99	05/21/00
Antenna	CHASE CBL6112A	2274	11/15/98	11/15/99
Note: All testing were performed using internationally recognized standards. All test instruments were calibrated and traceable to the National Institute of Standards and Technology (NIST).				

SIGNED:



REVIEWED:

