TIMCO ENGINEERING, Inc.

849 NW State Road 45
PO Box 370
Newberry, FL 32669

CLASS II PERMISSIVE CHANGE TEST REPORT

STANDARD (s):

FCC Part 15, Subparts B, C, and D
IC RSS-213 & ICES-003
UPCS / LE-PCS Isochronous Device
Base & Handset: 1921.536 – 1928.448 MHz
ANSI C63.17 - 1998 (or 2005 Draft where applicable)
ANSI C63.4 – 2003

APPLICANT:	**ASCALADE TECHNOLOGIES INC.** **12051 RIVERSIDE WAY** **RICHMOND, BC V6W 1K7 V6W 1K7** **Tel.: 1-604-204-2853** **MR. CHI-KIT WONG, QUALITY MANAGER**
MODEL NUMBERS:	**DECT200S-US-01 (BASE)** **DECT200H-US-01 (HANDSET)**
DESCRIPTION OF PRODUCT:	**VoIP Cordless DECT USB Telephone**
FCC IDs:	**PBWDT19R42 (BASE)** **PBWDT19R42H (HANDSET)**
IC:	**3842A-B215**
DATE SAMPLE RECEIVED FOR TESTING:	**9/18/2007**
DATE TESTED:	**9/26/2007**
TEST RESULTS:	**☒ PASS ☐ FAIL**

PLEASE NOTE: THE ATTACHED REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE WRITTEN APPROVAL OF TIMCO ENGINEERING, INC.

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1 GENERAL INFORMATION

The test results relate only to the items tested.

This report is for a Class II Permissive change. The device uses the same RF module as the originally approved device – the only difference is the housing. The data in the following pages shows that there is no degradation in results.

1.1 COMPLIANCE STATEMENT:

This equipment has been tested in accordance with the standards identified in this test report. To the best of my knowledge and belief, these tests were performed using the measurement procedures described in this report and demonstrate that the equipment complies with the appropriate standards. No modifications were made to the equipment during testing in order to demonstrate compliance with these standards.

I attest that the necessary measurements were made, under my supervision, at TIMCO ENGINEERING, INC. located at 849 N.W. State Road 45, Newberry, Florida 32669.

Authorized Signatory Name: NAM NGUYEN

Signature: <ON FILE>

Function: Engr. Tech.

Date: 9/26/2007

1.2 EQUIPMENT UNDER TEST SPECIFICATION

Characterization of test item:

Prototype ☒
Pre-production ☐
Production ☐

Construction of equipment:

☒ Single unit
☐ Multiple units (If multiple units describe each one clearly)

TYPE OF EQUIPMENT:

Fixed ☒
Mobile ☐
Portable Station ☐

X	Transmitter		Simplex	X	Integral antenna (Handset and Base)
	Receiver	X	Duplex		Single antenna connector
	Transceiver				Two antenna connector
X	Battery charger				Vehicle battery adaptor
	Remote Control Head				

1.2.1 TRANSMITTER TECHNICAL CHARACTERISTICS

FREQUENCY CHARACTERISTICS (Method of frequency generation):

CRYSTAL ☐ SYNTHESIZER ☒ OTHER ☐

MAXIMUM RATED TRANSMITTER OUTPUT POWER: 80mW for the Base and 80mW for the Handset.

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1.3 TEST STANDARDS

FCC Part 15, Subparts B, C, and D
IC RSS-213 & ICES-003
UPCS / LE-PCS Isochronous Device
Base & Handset: 1921.536 – 1928.448 MHz
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2 TEST RESULTS

2.1 RADIATED PEAK TRANSMIT POWER

Clause: 15.319 (c)

Test procedure: ANSI C63.17 section 6.1.2

Technical requirements/Limits:

The peak transmit power shall not exceed 100 µW multiplied by the square root of the emission bandwidth in hertz measured at 26dBc.
The measured emissions bandwidth is 1.5 MHz max

Limit = 100µW * √(BW in Hz)= 0.122W = 20.8 dBm

and Radiated limit ≤ 118 dBµV/m at 3m by radiated measurement derived from Friis formula as follows $P = (E*d)^2/30G$, where P = 0.122 W = 20.8 dBm

This assumes a G = Numeric gain of TX antenna = 1.585 (2.0 dBi) worst-case across band
d = 3 m

Notes: The calculated limit of 118 dBµV/m assumes free space conditions. This device was measured on a typical test site (OATS) with a reference ground plane as described in ANSI C63.4. This maximum value was obtained with the EUT set up at a height of 80cm. Placing the EUT at a height of 100cm reduces the maximum amplitude measured by about 3-4dB.

Test Conditions:

Power output measurements were performed on an Open Area Test Site at a distance of 3meter.
The antenna for this device is integral.
SA Settings:
RBW ≥ Emission BW (or increased until no more than 0.5 dB change in power), VBW ≥ 3 x RBW
Span = zero, centered on channel center, Sweep: fast enough to resolve transmit pulse
Detection: Peak

Results:

2.1.1 BASE:

BASE	ASCALADE TECHNOLOGIES INC.					
3117AUT7	9/18/2007					
Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBuV	Ant. Polarity	Coax Loss dB	Correction Factor dB	Field Strength dBuV/m
1,921.50	1,921.54	71.7	H	2.84	30.70	105.24
1,921.50	1,921.54	78.4	V	2.84	30.70	111.94
1,928.50	1,928.45	72.1	H	2.84	30.74	105.68
1,928.50	1,928.45	78.3	V	2.84	30.74	111.88

2.1.2 HANDSET:

HANDSET	ASCALADE TECHNOLOGIES INC.					
3117AUT7	9/18/2007					
Tuned Frequency MHz	Emission Frequency MHz	Meter Reading dBuV	Ant. Polarity	Coax Loss dB	Correction Factor dB	Field Strength dBuV/m
1,921.50	1,921.54	73.9	H	1.7	30.70	107.44
1,921.50	1,921.54	81.3	V	1.7	30.70	114.84
1,928.50	1,928.45	75.2	H	1.7	30.74	108.78
1,928.50	1,928.45	81.5	V	1.7	30.74	115.08

2.2 TRANSMITTER SPURIOUS EMISSIONS

Clause: 15.319 (g) and 15.323(d)

Test procedure: ANSI C63.17 section 6.1.1

Technical requirements/Limits:
15.319(g) Notwithstanding other technical requirements specified in this subpart, attenuation of emissions below the general emission limits in Section 15.209 is not required.
15.323(d) Emissions outside the sub-band shall be attenuated below a reference power of 112 milliwatts as follows: 30 dB between the sub-band and 1.25 MHz above or below the sub-band; 50 dB between 1.25 and 2.5 MHz above or below the sub-band; and 60 dB at 2.5 MHz or greater above or below the subband. Compliance with the emission limits is based on the use of measurement instrumentation employing peak detector function with an instrument resolution bandwidth approximately equal to 1.0 percent of the emission bandwidth of the device under measurement.

Test Conditions:
Lowest and Highest channel only. Radiated on an Open Area Test Site at a distance of 3 meter.

Results:
2.2.1 BASE:

CH 5				CH 1		
Emission MHz	**V dBuV/m**	**H dBuV/m**		**Emission MHz**	**V dBuV/m**	**H dBuV/m**
3843.08	*	*		3856.90	*	*
5764.62	*	*		5785.35	*	*
7686.16	*	*		7713.80	*	*
9607.70	*	*		9642.25	*	*
11529.24	*	*		11570.70	*	*
13450.78	*	*		13499.15	*	*
15372.32	*	*		15427.60	*	*
17293.86	*	*		17356.05	*	*
19215.40	*	*		19284.50	*	*

* Noise floor. All harmonic emissions are >60dBc.

2.2.2 HANDSET:

CH 5				CH 1		
Emission MHz	**V dBuV/m**	**H dBuV/m**		**Emission MHz**	**V dBuV/m**	**H dBuV/m**
3843.08	*	*		3856.90	*	*
5764.62	*	*		5785.35	*	*
7686.16	*	*		7713.80	*	*
9607.70	*	*		9642.25	*	*
11529.24	*	*		11570.70	*	*
13450.78	*	*		13499.15	*	*
15372.32	*	*		15427.60	*	*
17293.86	*	*		17356.05	*	*
19215.40	*	*		19284.50	*	*

* Noise floor. All harmonic emissions are >60dBc.

2.3 GENERAL RADIATED SPURIOUS EMISSIONS

2.3.1 RADIATED SPURIOUS EMISSIONS

Clause: 15.109, 15.33, and 15.31

Test procedure: ANSI C63.4 - 2003

Technical requirements/Limits:

Emission Frequency (MHz)	Field Strength		At Distance (m)	Detector Type
	(μV/m)	(dBμV/m)		
0.009 – 0.490	2400/f (kHz)	67.6 / kHz	300	AV (9-90 kHz, 110-490 kHz) QP (others)
0.490 – 1.705	24000/f (kHz)	87.6 / kHz	30	QP
1.705 – 30.0	30	29.5	30	QP
30 – 88	100	40	3	QP
88 – 216	150	43.5	3	QP
216 – 960	200	46	3	QP
> 960	500	54	3	AV (> 1GHz)

Test Conditions:
Lowest and Highest channel only. Radiated on an Open Area Test Site at a distance of 3meter.
PK: RBW ≥ 100 kHz for f < 1 GHz, 1 MHz for f ≥ 1 GHz, VBW ≥ RBW
Avg: RBW = 1 MHz for f ≥ 1 GHz, VBW = 10Hz, Linear average. If the emission is pulsed, the device was modified for continuous operations, and the average level was calculated according to part 15.35(c)

Results:

2.3.2 BASE IN STAND-BY MODE:

Emission Frequency MHz	Meter Reading dBuV	Ant. Polarity	Coax Loss dB	Correction Factor dB	Field Strength dBuV/m	Margin dB
55.32	4.5	V	0.52	11.78	16.80	23.20
138.24	6.8	V	0.69	12.87	20.36	23.14
138.25	15.3	H	0.69	13.10	29.09	14.41
217.60	4.0	V	0.94	11.32	16.26	29.74
221.20	6.4	H	0.94	11.50	18.84	27.16
235.15	6.6	H	0.97	11.76	19.33	26.67
362.70	4.7	V	1.16	14.88	20.74	25.26
377.30	4.5	H	1.18	15.35	21.03	24.97

2.3.3 HANDSET IN STAND-BY MODE:

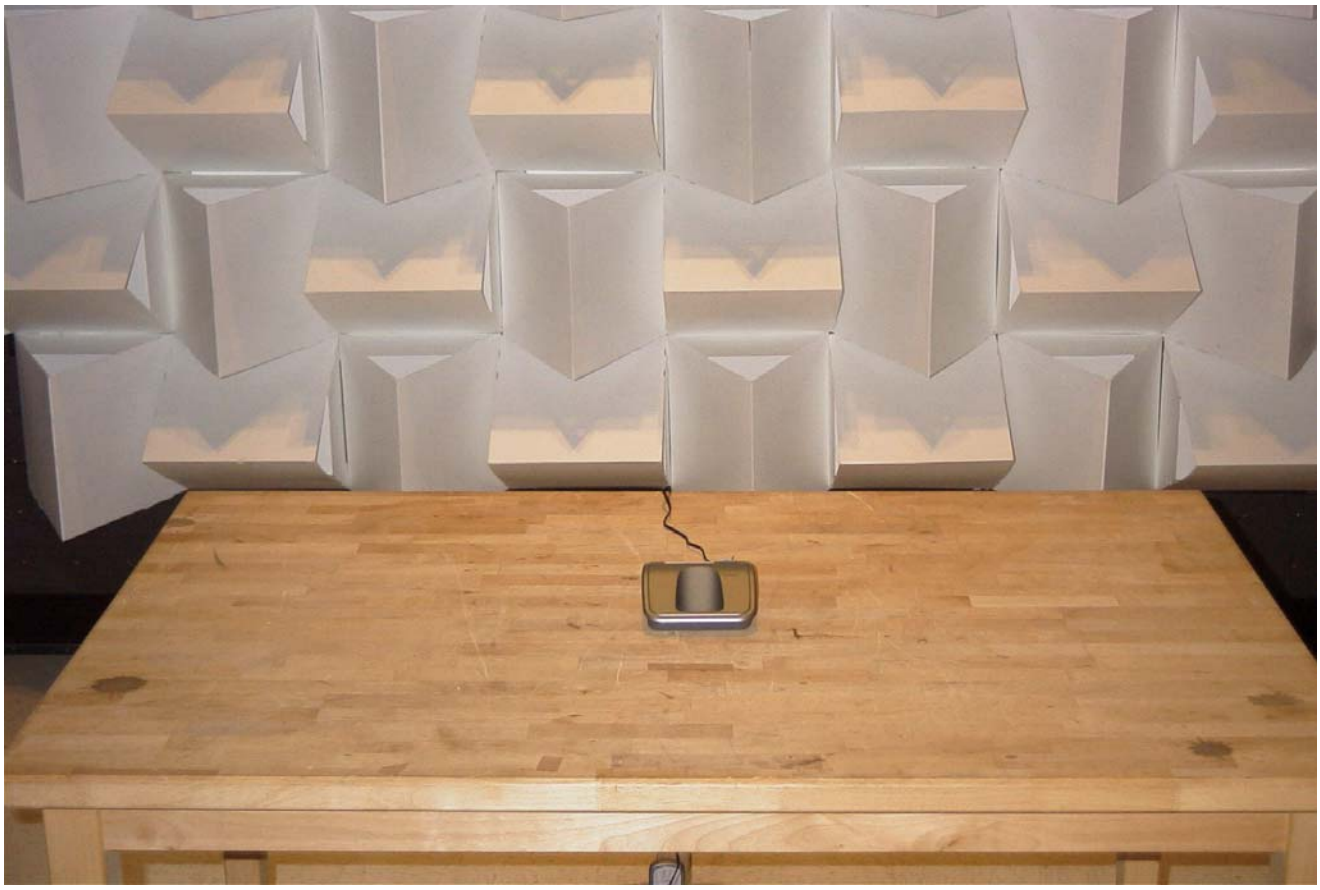
Emission Frequency MHz	Meter Reading dBuV	Ant. Polarity	Coax Loss dB	Correction Factor dB	Field Strength dBuV/m	Margin dB
62.70	4.5	H	0.54	10.61	15.65	24.35
83.10	6.5	V	0.61	7.38	14.49	25.51
96.90	10.3	V	0.64	11.04	21.98	21.52
124.50	7.3	V	0.67	13.64	21.61	21.89
154.40	4.3	H	0.72	13.96	18.98	24.52
207.35	8.3	H	0.91	11.95	21.16	22.34
207.35	8.4	V	0.91	11.70	21.01	22.49
235.10	8.9	H	0.97	11.76	21.63	24.37
235.15	8.2	V	0.97	11.56	20.73	25.27
262.70	9.2	V	1.03	13.01	23.24	22.76
262.70	12.1	H	1.03	13.06	26.19	19.81
290.40	14.9	H	1.08	14.02	30.00	16.00
290.40	15.1	V	1.08	13.92	30.10	15.90
304.10	7.7	V	1.10	14.69	23.49	22.51
355.00	5.0	H	1.16	15.00	21.16	24.85
373.30	8.0	V	1.17	15.17	24.34	21.66
381.10	5.2	H	1.18	15.44	21.82	24.18
428.70	14.4	V	1.23	16.09	31.72	14.28
456.20	5.8	H	1.26	16.84	23.90	22.10
456.20	17.7	V	1.26	16.79	35.75	10.25
483.95	15.3	V	1.28	17.46	34.04	11.96
546.00	4.8	H	1.44	18.48	24.72	21.28
746.50	12.3	V	1.79	20.67	34.76	11.24
774.15	12.9	V	1.85	20.80	35.55	10.45
829.45	10.8	V	1.91	21.39	34.10	11.90

3 TEST EQUIPMENT AND ANCILLARIES USED FOR TESTS

Device	Manufacturer	Model	Serial Number	Cal/Char Date	Due Date
3/10-Meter OATS	TEI	N/A	N/A	Listed 3/20/07	3/19/10
3-Meter OATS	TEI	N/A	N/A	Listed 1/11/06	1/10/09
3-Meter Semi-Anechoic Chamber	Panashield	N/A	N/A	Listed 5/11/07	5/10/10
Antenna: Biconnical	Eaton	94455-1	1057	CAL 12/12/05	12/12/07
Antenna: Biconnical	Eaton	94455-1	1096	CAL 10/11/06	10/11/08
Analyzer Blue Tower Quasi-Peak Adapter	HP	85650A	2811A01279	CAL 5/17/07	5/17/09
Analyzer Blue Tower RF Preselector	HP	85685A	2926A00983	CAL 5/17/07	5/17/09
Analyzer Blue Tower Spectrum Analyzer	HP	8568B	2928A04729 2848A18049	CAL 5/17/07	5/17/09
LISN	Electro-Metrics	ANS-25/2	2604	CAL 10/5/06	10/5/08
Antenna: Log-Periodic	Electro-Metrics	LPA-25	1122	CAL 12/1/06	12/1/08

4 TEST SETUP PHOTOGRAPHS

RADIATED TEST SET UP (BASE):



RADIATED TEST SET UP (HANDSET):