RADIATED SPURIOUS EMISSIONS PORTIONS OF

FCC CFR47 PART 22 SUBPART H
FCC CFR47 PART 24 SUBPART E

CERTIFICATION TEST REPORT

FOR

DOG TRACKING COLLAR

MODEL: Tagg FTD
FCC ID: J9CFTD1

REPORT NUMBER: 11U13718-1

ISSUE DATE: MARCH 19, 2011

Prepared for

QUALCOMM INCORPORATED
5775 MOREHOUSE DRIVE
SAN DIEGO, CA 92121, U.S.A.

Prepared by

COMPLIANCE CERTIFICATION SERVICES (UL CCS)
47173 BENICIA STREET
FREMONT, CA 94538, U.S.A.
TEL: (510) 771-1000
FAX: (510) 661-0888

NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
---	03/19/2011	Initial Issue	T. Chan

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: QUALCOMM INCORPORATED
5775 MOREHOUSE DRIVE
SAN DIEGO, CA 92121, U.S.A.

EUT DESCRIPTION: DOG TRACKING COLLAR

MODEL: Tagg FTD

SERIAL NUMBER: N10FDX92G

DATE TESTED: MARCH 16-18, 2011

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 22H & 24E	PASS (Radiated Portion)

Compliance Certification Services, Inc. (UL CCS) tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL CCS based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL CCS will constitute fraud and shall nullify the document. No part of this report may be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any government agency.

Approved & Released For UL CCS By:

THU CHAN
ENGINEERING MANAGER
UL CCS

Tested By:

CHIN PANG
EMC ENGINEER
UL CCS

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA-603-C, FCC CFR 47 Part 2, FCC CFR 47 Part 22, and FCC CFR Part 24.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

UL CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at http://www.ccsemc.com.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)

36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 1000 MHz	4.94 dB

Uncertainty figures are valid to a confidence level of 95%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is an 850 / 1900 MHz CDMA2000, 1xRTT dog collar tracking device.

5.2. MAXIMUM OUTPUT POWER

The transmitter has maximum, peak ERP and EIRP output powers as follow:

1xRTT CDMA MODE

824 to 849 MHz Authorized Band

Frequency Range (MHz)	Modulation	ERP Output Power (dBm)	ERP Output Power (mW)
Low CH - 824.70	1xRTT CDMA2000	29.15	822.2
Mid CH - 836.52		29.10	812.8
High CH - 848.31		27.87	612.4

1850 to 1910 MHz Authorized Band

Frequency Range (MHz)	Modulation	EIRP Output Power (dBm)	EIRP Output Power (mW)
Low CH - 1851.25	1xRTT CDMA2000	29.36	863.0
Mid CH - 1880.00		30.08	1018.6
High CH - 1908.75		29.08	809.1

5.3. SOFTWARE AND FIRMWARE

The EUT is linked with Agilent Communication Test Set.

5.4. WORST-CASE CONFIGURATION AND MODE

For the fundamental investigation, since the EUT is a portable device that has three positions; therefore X, Y and Z positions have been investigated, and the worst case was found to be at Z position

PROCEDURE USED TO ESTABLISH TEST SIGNAL

3G-CDMA2000 1xRTT

This procedure assumes the Agilent 8960 Test Set has the following applications installed and with valid license.

Application	Rev, License
CDMA2000 Mobil Test	B.10.11, L

1xRTT

- Call Setup > Shift & Preset
- Protocol Rev > 6 (IS-2000-0)
- Radio Config (RC) > RC2 (Fwd2, Rvs2)
- FCH Service Option (SO) Setup > 55
- Traffic Data Rate > Full
- TDSO SCH Info > F-SCH Parameters > F-SCH Data Rate > 153.6 kbps
  > R-SCH Parameters > R-SCH Data Rate > 153.6 kbps
- Cell Info > Cell Parameters > System ID (SID) > 331
  > Network ID (NID) > 1

Once “Active Cell” show “Connected ” then change “Rvs Power Ctrl” from “Active bits” to “**All Up bits**” to get the maximum power.

Worst-case Measurement Result @ Low, Middle and High Channel

Worst-case Measurement Result for Low, Middle and High Channel under Radio Configuration RC2 and Service Option 55.

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

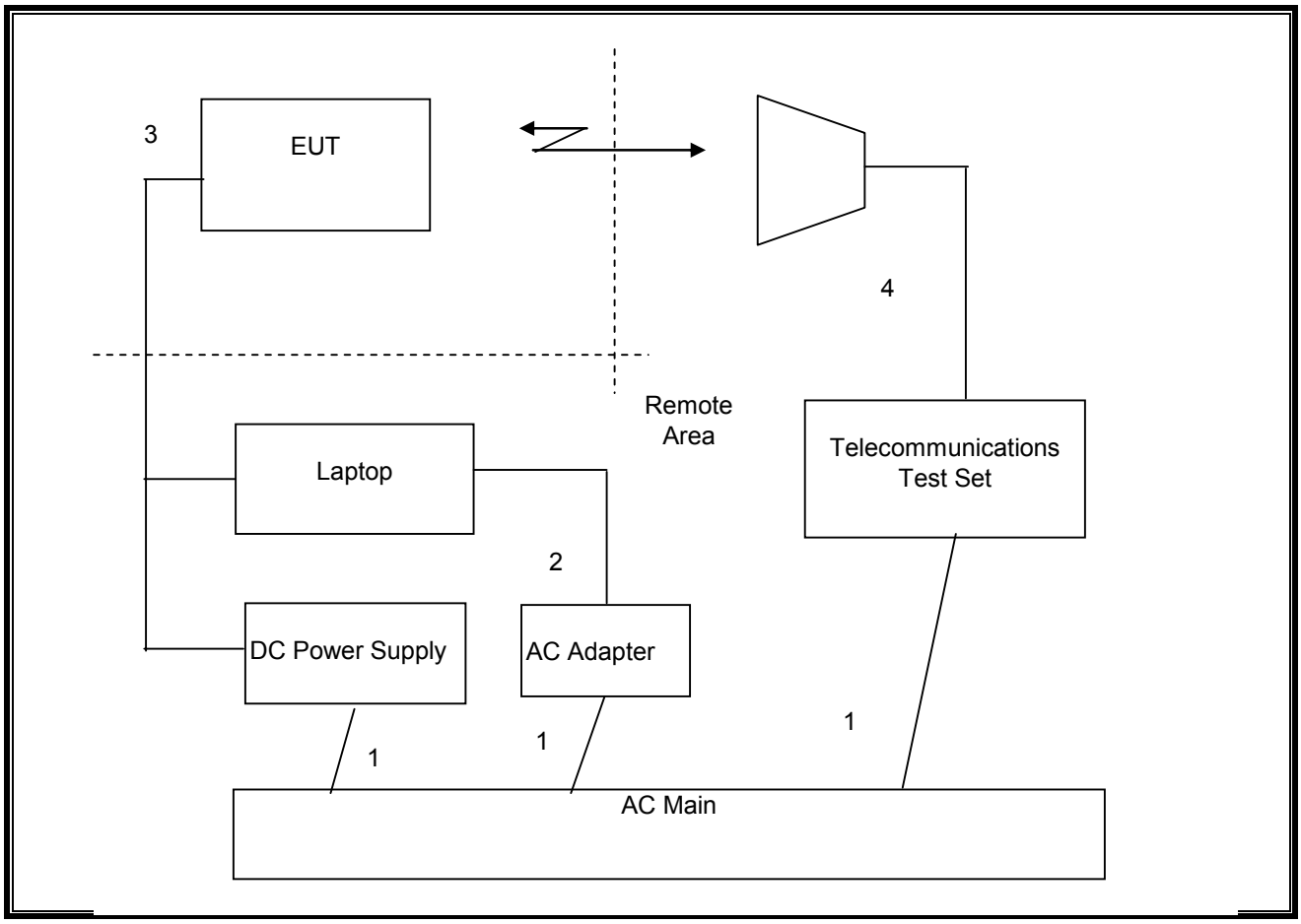
PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Laptop	Lenovo	T61	L3-P2058	DoC
AC Adapter	Lenovo	42T4430	11S42T4430Z1ZF3H	DoC
DC Poer Supply	Xantrex	XHR-60-18	5/5/1975	NA

I/O CABLES

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	AC	3	US 115V	Un-shielded	1m	NA
2	DC	1	DC	Un-shielded	2m	NA
3	USB	1	DC Power	Un-shielded	2m	NA
4	RF in/out	1	Horn	Un-shielded	4m	NA

TEST SETUP

SETUP DIAGRAM FOR TESTS



6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Asset**	**Cal Due**
Dipole	Speag	D900V2	None	7/14/2011
Preamplifier, 26.5GHz	Agilent/HP	8449B	C01063	7/12/2011
Antenna, Bilog, 2ghz	Sunol Sciences	JB1	c01016	8/30/2011
Spectrum Analyzer, 26.5GHz	Agilent/HP	E4440A	C01178	6/17/2011
Communications Test Set	Agilent/HP	E5515C	C01086	6/29/2011
Antenna Horn, 18GHz	EMCO	3115	C00872	6/29/2011
Highpass Filter, 2.7GHz	MicroTronics	HPM13194	N02687	CNR
Highpass Filter, 1.5GHz	MicroTronics	HPM13193	N02688	CNR
Antenna , Horn, 18GHz	EMCO	3115	C00783	6/29/2011
Signal Generator, 20GHz	Agilent/HP	83732B	C00774	7/14/2012

7. LIMITS AND RESULTS

7.1. RADIATED OUTPUT POWER

LIMITS

22.913(a) The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

24.232(b) & RSS133 § 6.4 Mobile/portable stations are limited to 2 watts e.i.r.p. peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.

TEST PROCEDURE

ANSI / TIA / EIA 603 Clause 2.2.17

RESULTS

1xRTT CDMA

CELL OUTPUT POWER (ERP)

High Frequency Substitution Measurement
Compliance Certification Services Chamber B

Company: Qualcomm
Project #: 11U13718
Date: 03/17/11
Test Engineer: Chin Pang
Configuration: EUT Only
Mode: TX, CELL BAND 1xRTT

Test Equipment:
Receiving: Sunol T130, and 3m Chamber N-type Cable (Setup this one for testing EUT)
Substitution: Dipole S/N: 00022117, 6ft SMA Cable (SN # 208947003) Warehouse.

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
824.70	24.92	V	0.5	0.0	24.42	38.5	-14.0	
824.70	29.65	H	0.5	0.0	29.15	38.5	-9.3	
836.52	24.34	V	0.5	0.0	23.84	38.5	-14.6	
836.52	29.60	H	0.5	0.0	29.10	38.5	-9.4	
848.31	22.51	V	0.5	0.0	22.01	38.5	-16.4	
848.31	28.37	H	0.5	0.0	27.87	38.5	-10.6	

Rev. 3.17.11

PCS OUTPUT POWER (EIRP)

High Frequency Fundamental Measurement
Compliance Certification Services Chamber B

Company: Qualcomm
Project #: 11U13718
Date: 03/18/11
Test Engineer: Chin Pang
Configuration: EUT Only
Mode: TX, PCS BAND 1xRTT

Test Equipment:
Receiving: Horn T59, and Camber B SMA Cables
Substitution: Horn T60 Substitution, 6ft SMA Cable (208947003) Warehouse

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
1.851	19.9	V	0.85	8.01	27.06	33.0	-5.9	
1.851	22.2	H	0.85	8.01	29.36	33.0	-3.6	
1.880	17.9	V	0.85	8.13	25.18	33.0	-7.8	
1.880	22.8	H	0.85	8.13	30.08	33.0	-2.9	
1.909	17.1	V	0.85	8.13	24.38	33.0	-8.6	
1.909	21.8	H	0.85	8.13	29.08	33.0	-3.9	

Rev. 3.17.11

7.2. FIELD STRENGTH OF SPURIOUS RADIATION

LIMIT

§22.917 (e) and §24.238 (a), Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

TEST PROCEDURE

ANSI / TIA / EIA 603 Clause 3.2.12 & FCC 22.917 (b) & FCC 24.238 (b), (g)(1)(2)(3)

RESULTS

1xRTT CDMA

CELL SPURIOUS & HARMONIC (ERP)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company: Qualcomm
Project #: 11U13718
Date: 03/18/11
Test Engineer: Chin Pang
Configuration: EUT Only
Mode: TX, CDMA 850, 1xRTT

Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T145 8449B	Filter 1	Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.7MHz									
1.649	-8.2	V	3.0	35.5	1.0	-42.8	-13.0	-29.8	
2.471	-10.5	V	3.0	35.4	1.0	-45.0	-13.0	-32.0	
3.299	-15.9	V	3.0	35.5	1.0	-50.4	-13.0	-37.4	
1.649	-2.0	H	3.0	35.5	1.0	-36.6	-13.0	-23.6	
2.471	-10.2	H	3.0	35.4	1.0	-44.6	-13.0	-31.6	
3.299	-15.4	H	3.0	35.5	1.0	-50.0	-13.0	-37.0	
Mid Ch, 836.52MHz									
1.673	-8.6	V	3.0	35.5	1.0	-43.1	-13.0	-30.1	
2.510	-13.2	V	3.0	35.4	1.0	-47.6	-13.0	-34.6	
3.342	-15.3	V	3.0	35.5	1.0	-49.8	-13.0	-36.8	
1.673	-6.7	H	3.0	35.5	1.0	-41.3	-13.0	-28.3	
2.510	-17.3	H	3.0	35.4	1.0	-51.7	-13.0	-38.7	
3.342	-15.2	H	3.0	35.5	1.0	-49.7	-13.0	-36.7	
Hi Ch, 848.3MHz									
1.697	-12.9	V	3.0	35.5	1.0	-47.4	-13.0	-34.4	
2.545	-9.6	V	3.0	35.4	1.0	-44.1	-13.0	-31.1	
3.393	-14.8	V	3.0	35.5	1.0	-49.3	-13.0	-36.3	
1.697	-7.3	H	3.0	35.5	1.0	-41.8	-13.0	-28.8	
2.545	-18.2	H	3.0	35.4	1.0	-52.6	-13.0	-39.6	
3.393	-13.7	H	3.0	35.5	1.0	-48.2	-13.0	-35.2	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

PCS Spurious & Harmonic (EIRP)

Compliance Certification Services
Above 1GHz High Frequency Substitution Measurement

Company:	Qualcomm
Project #:	11U13718
Date:	03/18/11
Test Engineer:	Chin Pang
Configuration:	EUT Alone
Mode:	TX, CDMA1900, 1xRTT

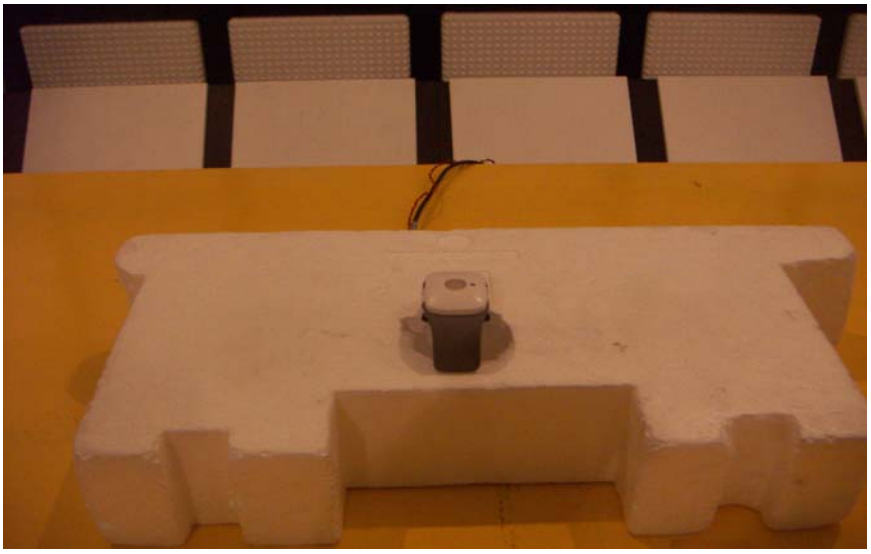
Chamber	Pre-amplifer	Filter	Limit
5m Chamber B	T145 8449B	Filter 1	Part 24

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1851.25MHz									
3.70	3.5	V	3.0	35.4	1.0	-30.8	-13.0	-17.8	
5.55	-5.6	V	3.0	35.4	1.0	-40.0	-13.0	-27.0	
7.50	-7.9	V	3.0	35.7	1.0	-42.6	-13.0	-29.6	
3.70	5.5	H	3.0	35.4	1.0	-28.8	-13.0	-15.8	
5.55	-4.2	H	3.0	35.4	1.0	-38.6	-13.0	-25.6	
7.50	-4.8	H	3.0	35.7	1.0	-39.5	-13.0	-26.5	
Mid Ch, 1880MHz									
3.76	1.5	V	3.0	35.3	1.0	-32.9	-13.0	-19.9	
5.64	-3.3	V	3.0	35.4	1.0	-37.7	-13.0	-24.7	
7.52	-6.6	V	3.0	35.7	1.0	-41.3	-13.0	-28.3	
3.76	2.5	H	3.0	35.3	1.0	-31.8	-13.0	-18.8	
5.64	-0.6	H	3.0	35.4	1.0	-35.1	-13.0	-22.1	
7.52	-3.4	H	3.0	35.7	1.0	-38.1	-13.0	-25.1	
High Ch, 1908.75MHz									
3.82	2.7	V	3.0	35.3	1.0	-31.6	-13.0	-18.6	
5.73	-7.3	V	3.0	35.4	1.0	-41.8	-13.0	-28.8	
7.64	-6.6	V	3.0	35.7	1.0	-41.3	-13.0	-28.3	
3.82	5.0	H	3.0	35.3	1.0	-29.3	-13.0	-16.3	
5.73	-2.9	H	3.0	35.4	1.0	-37.3	-13.0	-24.3	
7.64	-4.1	H	3.0	35.7	1.0	-38.8	-13.0	-25.8	

Rev. 01.20.11
Note: No other emissions were detected above the system noise floor.

8. SETUP PHOTOS

X-ORIENTATION PHOTO



RADIATED RF MEASUREMENT SETUP

Y-ORIENTATION PHOTO

Z-ORIENTATION PHOTO

END OF REPORT