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FCC REPORT

Report Reference No..... :	**TRE1404013902**	R/C…….: 35258
Applicant's name..... :	**Quantam Telematics Limited.**	
Address.....:	19 COASTAL PROMENADE, POINT COOK, VICTORIA, 3030, AUSTRALIA	
Manufacturer.....:	Quantam Telematics Limited.	
Address.....:	19 COASTAL PROMENADE, POINT COOK, VICTORIA, 3030, AUSTRALIA	
Test item description ..... :	Automotive Tracking Unit	
Trade Mark .....:	Quantam Telematics	
Model/Type reference.....:	S.W.A.T	
Listed Model(s) .....:	100	
Standard ..... :	**FCC CFR Title 47 Part 2.1091**	
Date of receipt of test sample……..:	Apr 24, 2014	
Date of testing……:	Apr 24, 2014- Jun 11, 2014	
Date of issue……...:	Jun 12, 2014	
Result..... ……..:	**Pass**	

Compiled by (position+printed name+signature)..:	File administrators Jerome Luo	Jerome Luo
Supervised by (position+printed name+signature)..:	Test Engineer Yuchao Wang	yuchao.wang
Approved by (position+printed name+signature)..:	Manager Hans Hu	Hans Hu

Testing Laboratory Name ..... :	**Shenzhen Huatongwei International Inspection Co., Ltd**
Address.....:	Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China

Contents

1. SUMMARY

1.1. Client Information

Applicant:	Quantam Telematics Limited.
Address:	19 COASTAL PROMENADE, POINT COOK, VICTORIA, 3030, AUSTRALIA
Manufacturer:	Quantam Telematics Limited.
Address:	19 COASTAL PROMENADE, POINT COOK, VICTORIA, 3030, AUSTRALIA

1.2. Product Description

Name of EUT	Automotive Tracking Unit
Trade Mark:	Quantam Telematics
Model No.:	S.W.A.T
Listed Model(s):	100
Power supply:	DC 3.7V
2G:	
Support Network:	GPRS
Support Band:	GPRS850, GPRS1900
Modulation:	GPRS: GMSK
Transmit Frequency:	GPRS850: 824.20MHz-848.80MHz GPRS1900: 1850.20MHz-1909.80MHz
Receive Frequency:	GPRS 850: 869.20MHz-893.80MHz GPRS1900: 1930.20MHz-1989.80MHz
GPRS Class:	12
Antenna type:	Internal Antenna
Antenna gain:	GPRS850: 0.0dBi GPES1900: -0.7dBi

Test Frequency:

GPRS 850		GPRS1900	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
128	**824.20**	**512**	**1850.20**
190	**836.60**	**661**	**1880.00**
251	**848.80**	**810**	**1909.80**

2. TEST ENVIRONMENT

2.1. Address of the test laboratory

Shenzhen Huatongwei International Inspection Co., Ltd
Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China
Phone: 86-755-26715686 Fax: 86-755-26748089

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 (2009) and CISPR Publication 22.

2.2. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15-35 ° C
Humidity:	30-60 %
Atmospheric pressure:	950-1050mbar

2.3. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01" Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 2 " and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen Huatongwei laboratory is reported:

Test Items	Measurement Uncertainty	Notes
Transmitter power conducted	0.57 dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

3. Method of measurement

3.1. Applicable Standard

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.
According to §1.1310 and §2.1091 RF exposure is calculated.
KDB447498 v05r02:Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies

3.2. Limit

Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm^2)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	6
3.0 – 30	1842/f	4.89/f	$(900/f^2)$*	6
30 – 300	61.4	0.163	1.0	6
300 – 1500	/	/	f/300	6
1500 – 100,000	/	/	5	6

Limits for Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm^2)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	30
3.0 – 30	824/f	2.19/f	$(1800/f^2)$*	30
30 – 300	27.5	0.073	0.2	30
300 – 1500	/	/	f/1500	30
1500 – 100,000	/	/	1.0	30

F=frequency in MHz
*=Plane-wave equivalent power density

3.3. MPE Calculation Method

Predication of MPE limit at a given distance
Equation from page 18 of OET Bulletin 65, Edition 97-01

$S=PG/4\pi R^2$

Where: S=power density
P=power input to antenna
G=power gain of the antenna in the direction of interest relative to an isotropic radiator
R=distance to the center of radiation of the antenna

As declared by the Applicant, the EUT transmits with the maximum soure-baed Duty Cycle of 100%-see the User manual, and the EUT is a wireless device used in a mobile application, at least 20 cm from any body part of the user or nearby persons; from the maximum EUT RF output power, the minimum mobile separation distance, r =20cm, as well as the gain of the used antenna（GPRS850） is 0.00dBi and the gain of the used antenna（GPRS1900）is -0.7dBi, the RF power density can be obtained.

TEST RESULTS

Manufacturing tolerance

GSM850 GPRS				
Channel		251	190	128
1 Txslot	Target (dBm)	32.00	32.00	32.00
	Tolerance ±(dB)	1	1	1
2 Txslot	Target (dBm)	29.50	29.50	29.50
	Tolerance ±(dB)	1	1	1
3 Txslot	Target (dBm)	27.50	27.50	27.50
	Tolerance ±(dB)	1	1	1
4 Txslot	Target (dBm)	26.50	26.50	26.50
	Tolerance ±(dB)	1	1	1
GSM1900 GPRS				
Channel		810	661	512
1 Txslot	Target (dBm)	29.50	29.50	29.50
	Tolerance ±(dB)	1	1	1
2 Txslot	Target (dBm)	27.00	27.00	27.00
	Tolerance ±(dB)	1	1	1
3 Txslot	Target (dBm)	25.00	25.00	25.00
	Tolerance ±(dB)	1	1	1
4 Txslot	Target (dBm)	24.00	24.00	24.00
	Tolerance ±(dB)	1	1	1

GPRS850

Test Frequency (MHz)	Minimum Separation Distance (cm)	Output Power (dBm)	Output Power (mW)	Antenna Gain (Numeric)	Power Density At 20 cm (mW/cm^2)	Power Density Limit (mW/cm^2)	Test Results
824.20	20.00	33.00	1995.26	1.00	0.3969	0.5495	PASS
836.60	20.00	33.00	1995.26	1.00	0.3969	0.5577	PASS
848.80	20.00	33.00	1995.26	1.00	0.3969	0.5659	PASS

GPRS1900

Test Frequency (MHz)	Minimum Separation Distance (cm)	Output Power (dBm)	Output Power (mW)	Antenna Gain (Numeric)	Power Density At 20 cm (mW/cm^2)	Power Density Limit (mW/cm^2)	Test Results
1850.20	20.00	30.50	1122.02	0.85	0.1900	1.0000	PASS
1880.00	20.00	30.50	1122.02	0.85	0.1900	1.0000	PASS
1909.80	20.00	30.50	1122.02	0.85	0.1900	1.0000	PASS

4. Conclusion

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure.

.....End of Report.....