A Test Lab Techno Corp.

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MPE Report

Test Report No.	：	1609FS12
Applicant	：	GlobalSat WorldCom Corporation
Product Type	：	Motorcycle / Vehicle Tracker (GSM/DCS/WCDMA)
Trade Name	：	GlobalSat
Model Number	：	GTR-388A12
Date of Received	：	Aug. 09, 2016
Test Period	：	Aug. 11, 2016
Date of Issued	：	Sep. 19, 2016
Test Specification	：	ANSI / IEEE Std.C95.1-1992 / IEEE Std. 1528-2013
		47 CFR § 2.1091
		47 CFR § 1.1310
Location of Test Lab.	：	Chang-an Lab.

1. The test operations have to be performed with cautious behavior, the test results are as attached.
2. The test results are under chamber environment of A Test Lab Techno Corp. A Test Lab Techno Corp. does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples.
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4. This document may be altered or revised by A Test Lab Techno. Corp. personnel only, and shall be noted in the revision section of the document.

Approved By ： (Bill Hu)　　Tested By ： (Mark Duan)

Contents

1. Description of Equipment under Test (EUT)

Applicant	GlobalSat WorldCom Corporation 16F., No.186, Jian 1st Rd. Zhonghe Dist., New Taipei City 23553 Taiwan	
Manufacturer	GlobalSat WorldCom Corporation 16F., No.186, Jian 1st Rd. Zhonghe Dist., New Taipei City 23553 Taiwan	
Product Type	Motorcycle / Vehicle Tracker (GSM/DCS/WCDMA)	
Trade Name	GlobalSat	
Model Number	GTR-388A12	
FCC ID	RID-GTR-388	
Frequency Range	GPRS 850 GPRS 1900 WCDMA Band II WCDMA Band V *GPRS Multi Class :12	824.2 - 848.8 MHz 1850.2 - 1909.8 MHz 1850.2 - 1909.8 MHz 826.4 - 846.6 MHz
Antenna information	Type	Max. Gain (dBi)
	Monopole Antenna	-2.0
Temperature Range	-30 ~ +60°C	
RF Evaluation	0.040 mW/cm^2	

The above equipment was tested by A Test Lab Techno Corp. For compliance with the requirements set forth in 47 CFR § 2.1091 / 47 CFR § 1.1310. The results of testing in this report apply only to the product/system, which was tested. Other similar equipment will not necessarily produce the same results due to production tolerance and measurement uncertainties

2. Human Exposure Assessment

Due to the design and installation of this product, it is not possible to conduct SAR evaluation. This is because client either manufactures or supplies the antenna(s) that will be used in the installation of this product. Therefore, this product will be evaluated as a mobile device per 47 CFR § 1.1310 titled “Radiofrequency radiation exposure limits”, generally referred to as MPE limits.

In 47 CFR § 2.1091, paragraph (b) defines a mobile device as “a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 cm is normally maintained between the transmitter’s radiating structure(s) and the body of the user or nearby persons. ” This product is intended to be installed into a vehicle such that the unit is physically secured at one location. In the installation guide supplied with the product,

Client has made the following statement: “IMPORTANT: To meet the FCC’s RF Exposure Guidelines, the antenna should be installed so there is at least 20 cm of separation between the body of the user and nearby persons and the antenna”. Based on the installation of the transceiver and the antenna, the transmitters radiating structure is more than 20 cm from the user. Thus, this product is a “mobile device” as defined in section § 2.1091 paragraph (b).

Exposure evaluation
$$S = \frac{PG}{4\pi R^2}$$ Where S: power density P: power input to the 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.

3. RF Output Power

The conducted power turn-up tolerance reference manufacturer specification.

Band	Date Rate	CH	Frequency (MHz)	Average Conducted power (dBm)	
				Time Average	Burst Average
GPRS850	4Down1Up	128	824.2	23.57	32.60
		190	836.6	23.51	32.54
		251	848.8	23.39	32.42
	3Down2Up	128	824.2	24.42	30.44
		190	836.6	24.36	30.38
		251	848.8	24.24	30.26
	2Down3Up	128	824.2	24.20	28.46
		190	836.6	24.14	28.40
		251	848.8	24.02	28.28
	1Down4Up	128	824.2	24.02	27.03
		190	836.6	23.96	26.97
		251	848.8	23.84	26.85
GPRS1900	4Down1Up	512	1850.2	20.13	29.16
		661	1880.0	20.03	29.06
		810	1909.8	20.00	29.03
	3Down2Up	512	1850.2	21.26	27.28
		661	1880.0	21.16	27.18
		810	1909.8	21.13	27.15
	2Down3Up	512	1850.2	21.37	25.63
		661	1880.0	21.27	25.53
		810	1909.8	21.24	25.50
	1Down4Up	512	1850.2	21.05	24.06
		661	1880.0	20.95	23.96
		810	1909.8	20.92	23.93

Band	Sub-Test	CH	Frequency (MHz)	Average Conducted power (dBm)
WCDMA Band II	RMC12.2K	9262	1852.4	23.08
		9400	1880.0	22.84
		9538	1907.6	22.61
WCDMA Band V	RMC12.2K	4132	826.4	23.24
		4183	836.6	23.02
		4233	846.4	22.86

4. Test Result

Test condition:

1. The Numeric Gain calculated by 10^(ant. Gain(dBi) /10).
2. Each band max power which perform MPE of any configurations.

Band	Data Rate	Frequency (MHz)	Limit (mw/cm^2)	Distance [R] (cm)	Max tune-up Power [P] (dBm)	ANT Gain (dB)	Numeric Gain [G]	Duty Cycle	[P] x [G] with Duty cycle [TP] (mW)	Power Density [S] (mw/cm^2)
GPRS 850	4Down1Up	824.2	0.549	20	33.00	-2.00	0.63	0.125	157.130	0.031
		836.6	0.558	20	33.00	-2.00	0.63	0.125	157.130	0.031
		848.8	0.566	20	33.00	-2.00	0.63	0.125	157.130	0.031
	3Down2Up	824.2	0.549	20	31.00	-2.00	0.63	0.250	198.280	0.039
		836.6	0.558	20	31.00	-2.00	0.63	0.250	198.280	0.039
		848.8	0.566	20	31.00	-2.00	0.63	0.250	198.280	0.039
	2Down3Up	824.2	0.549	20	29.00	-2.00	0.63	0.375	187.660	0.037
		836.6	0.558	20	29.00	-2.00	0.63	0.375	187.660	0.037
		848.8	0.566	20	29.00	-2.00	0.63	0.375	187.660	0.037
	1Down4Up	824.2	0.549	20	28.00	-2.00	0.63	0.500	198.750	0.040
		836.6	0.558	20	28.00	-2.00	0.63	0.500	198.750	0.040
		848.8	0.566	20	28.00	-2.00	0.63	0.500	198.750	0.040
GPRS 1900	4Down1Up	1850.2	1.000	20	30.00	-2.00	0.63	0.125	78.750	0.016
		1880.0	1.000	20	30.00	-2.00	0.63	0.125	78.750	0.016
		1909.8	1.000	20	30.00	-2.00	0.63	0.125	78.750	0.016
	3Down2Up	1850.2	1.000	20	28.00	-2.00	0.63	0.250	99.380	0.020
		1880.0	1.000	20	28.00	-2.00	0.63	0.250	99.380	0.020
		1909.8	1.000	20	28.00	-2.00	0.63	0.250	99.380	0.020
	2Down3Up	1850.2	1.000	20	26.00	-2.00	0.63	0.375	94.050	0.019
		1880.0	1.000	20	26.00	-2.00	0.63	0.375	94.050	0.019
		1909.8	1.000	20	26.00	-2.00	0.63	0.375	94.050	0.019
	1Down4Up	1850.2	1.000	20	25.00	-2.00	0.63	0.500	99.610	0.020
		1880.0	1.000	20	25.00	-2.00	0.63	0.500	99.610	0.020
		1909.8	1.000	20	25.00	-2.00	0.63	0.500	99.610	0.020

Band	Sub-Test	Frequency (MHz)	Limit (mw/cm^2)	Distance [R] (cm)	Max tune-up Power [P] (dBm)	ANT Gain (dBi)	Numeric Gain [G]	Duty Cycle	[P] x [G] with Duty cycle [TP] (mW)	Power Density [S] (mw/cm^2)
WCDMA Band II	RMC12.2K	1852.4	1.000	20	24.00	-2.00	0.63	1.000	158.250	0.031
		1880.0	1.000	20	24.00	-2.00	0.63	1.000	158.250	0.031
		1907.6	1.000	20	24.00	-2.00	0.63	1.000	158.250	0.031
WCDMA Band V	RMC12.2K	826.4	0.551	20	24.00	-2.00	0.63	1.000	158.250	0.031
		836.6	0.558	20	24.00	-2.00	0.63	1.000	158.250	0.031
		846.6	0.564	20	24.00	-2.00	0.63	1.000	158.250	0.031