

FCC 47 CFR Parts 1 & 2 Published RF Exposure KDB Procedures IEEE Std 1528-2003 and IEEE 1528a-2005

SAR EVALUATION REPORT

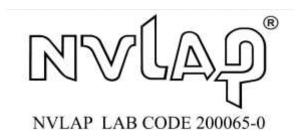
For

Model: Gemini ONX-580 FCC ID: TFB-TIWI1-01

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Revision History

Rev.	Issue Date	Revisions	Revised By
	4/11/2014	Initial Issue	
Α	4/14/2014	Section 8 – Updated antenna location diagram	Dave Weaver
В	4/16/2014	Section 5 – Corrected target powers	
		Section 2 – Updated KDB references	Dave Weaver

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1. Attestation of Test Results

Applicant	JDSU										
DUT description	Field Test Equipment										
Model	Gemini ONX-580										
Test device is	An identical prototype										
Device category	Portable	Portable									
Exposure category	General Population/Uncontrolled Exposure										
Date tested	4/2/2014	4/2/2014									
The highest	RF exposure condition	Licensed	DTS	UNII							
reported SAR values	Extremity	N/A W/kg	NA W/kg	N/A W/kg							
	Simultaneous Transmission	N/A W/kg	N/A W/kg	N/A W/kg							
Applicable Standards	FCC 47 CFR Parts 1 & 2 Published RF Exposure KDB Procedures, and TCB workshop updates IEEE Std 1528-2003 and IEEE Std 1528a-2005										
Test Results	Pass										

UL Verification Services Inc. 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 Verification Services Inc. 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 Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government (NIST Handbook 150, Annex A). This report is written to support regulatory compliance of the applicable standards stated above.

Approved & Released By:

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FORM NO: CCSUP4031G

2. Test Methodology

The tests documented in this report were performed in accordance with FCC 47 CFR Parts 1 & 2, IEEE STD 1528-2003, IEEE Std 1528a-2005, the following FCC Published RF exposure KDB procedures and TCB workshop updates:

- o KDB 447498 D01 General RF Exposure Guidance v05r02
- o KDB 865664 D01 SAR measurement 100 MHz to 6 GHz v01r03
- o KDB 865664 D02 SAR Reporting v01r01
- KDB 690783 D01 SAR Listings on Grants v01r03

3. Facilities and Accreditation

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

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

4. Device Under Test

4.1. General Information

Model: Gemini ONX-580							
Air-interface 2.4GHz							
RF Exposure Condition(s) Extremity							
Device dimension	Overall (Length x Width depth): 255mm x 120mm x 80mm						
Battery Options Internal battery							

4.2. Wireless Technologies

Wireless Technology and	2.4 GHz
Frequency Bands	
Mode	802.11b, g, n and Bluetooth

4.3. Simultaneous Transmission Condition

The DUT does not support simultaneous transmission.

4.4. SAR test rationale

The DUT is intended for handheld operation.

5. RF Output Power

Target powers are absolute maximums. The target powers quoted are maximum peak output power levels. These levels were used for test exclusion calculations.

5.1. Wi-Fi

The maximum output power for Wi-Fi is 19.67 dBm.

5.2. Bluetooth

The maximum Bluetooth power is 10.05 dBm

6. Exposure Conditions

The DUT is intended for handheld use with the rear of the DUT resting in the palm of the hand. The fingers may also curl around and be in contact with edges 2 and 4.

6.1. Required Test Configurations

Test Configurations	802.11/BT	Justification
Rear	No	Excluded - see 6.2
Front	No	Not normal use
Edge 1	No	Not normal use
Edge 2	No	Excluded - see 6.2
Edge 3	No	Not normal use
Edge 4	No	Excluded - see 6.2

6.2. SAR test exclusion calculations

6.2.1. Separation distances <50mm

Antenna	Tu	Tv.	Tx	т.,	Tv.	Tv	т.,	Tv	Tv	т.,	т.,	Frequency	Output power		Separation distances (mm)						Calculated SAR exclusion value				
Antenna IX		(MHz)	dBm	mW	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Front	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Front									
WiFi - Main Antenna																									
WLAN	WiFi	2412	19.67	93	52.4		34.7		35.3		>50mm		4.162		4.092										
WLAN	BT	2412	10.05	10	52.4		34.7		35.3		>50mm		0.448		0.440										
Note(s)																									

Testing for handheld operation is not required if the calculated SAR exclusion value is less than 7.5

6.2.2. Separation Distances >50mm

Antonno	Tv	T _v	т.,	Tv	Tv.	т.,	Tv	T.	T.,	Frequency	Output power		Separation distances (mm)						Calculated SAR exclusion value					
Antenna Tx		(MHz)	dBm	mW	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Front	Rear	Edge 1	Edge 2	Edge 3	Edge 4	Front								
WiFi - Main Antenna																								
WLAN	WiFi	2412	19.67	93	52.4		34.7		35.3		283mW		<50mm		<50mm									
WLAN	BT	2412	10.05	10	52.4		34.7		35.3		283mW		<50mm		<50mm									
Noto(s)																								

Testing for handheld operation is not required if the calculated SAR exclusion value greater than the output power

SAR testing is not required as none of the calculated SAR test exclusion values for separation distances <50mm exceeds 7.5 and SAR test exclusion values for separation distances >50mm are greater than the output power SAR testing is not required.