



**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-TIW11-01**

**Report Number: 14R16824-1B
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Prepared for
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Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
--	4/11/2014	Initial Issue	--
A	4/14/2014	Section 8 – Updated antenna location diagram	Dave Weaver
B	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			
Exposure category	General Population/Uncontrolled Exposure			
Date tested	4/2/2014			
The highest reported SAR values	RF exposure condition	Licensed	DTS	UNII
	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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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:

- KDB 447498 D01 General RF Exposure Guidance v05r02
- KDB 865664 D01 SAR measurement 100 MHz to 6 GHz v01r03
- 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 Frequency Bands	2.4 GHz
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	Tx	Frequency (MHz)	Output power		Separation distances (mm)						Calculated SAR exclusion value					
			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

Antenna	Tx	Frequency (MHz)	Output power		Separation distances (mm)						Calculated SAR exclusion value					
			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	

Note(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.