

FCC Part 15B Measurement and Test Report

For

Karacus LLC

428, Ridgefield Rd, Chapel Hill, NC 27517, USA

FCC ID: 2AF8B-Y6

Test Rule(s): FCC Part 15 Subpart B

Product Description: Proxima smart watch

Tested Model: Y6

Report No.: STR15108104I-3

Tested Date: 2015-10-15 to 2015-11-18

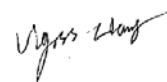
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Tested By: Vigoss Liang / Engineer

Reviewed By: Silin Chen / EMC Manager

Approved & Authorized By: Jandy So / PSQ Manager

Prepared By:



Shenzhen SEM.Test Technology Co., Ltd.

1/F, Building A, Hongwei Industrial Park, Liuxian 2nd Road,
Bao'an District, Shenzhen, P.R.C. (518101)

Tel.: +86-755-33663308 Fax.: +86-755-33663309 Website: www.semtest.com.cn

Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen SEM.Test Technology Co., Ltd.

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: Karacus LLC
Address of applicant: 428, Ridgefield Rd, Chapel Hill, NC 27517, USA

Manufacturer: Developed Solutions Co., Ltd
Address of manufacturer: Room801, Block 2, Long Jing Park , Bu Long Road , Yang Mei, BanTian, Long Gang

General Description of EUT	
Product Name:	Proxima smart watch
Trade Name:	iradish
Model No.:	Y6
Adding Model:	Y3 , Y8 , Y9 , Y10
Hardware version:	LD99-MP-V1.0
Software version:	/
<i>The EUT Main board support GSM850/900/DCS1800/PCS1900 function. It is intended for speech, Multimedia Message Service (MMS) transmission and Y6. It is equipped with GPRS class 12 for GSM850/900/DCS1800/PCS1900, GPS and BT functions. For more information see the following datasheet</i>	
<i>Note: The test data is gathered from a production sample provided by the manufacturer. The appearance of others models listed in the report is different from main-test model Y6 but the circuit and the electronic construction do not change, declared by the manufacturer.</i>	

Technical Characteristics of EUT	
Rated Voltage:	DC 3.7V Li-ion Battery
Battery Capacity:	350mAh
Rated Power:	/
Lowest Internal Frequency:	32.768kHz
Highest Internal Frequency:	260MHz
Classification of ITE:	Class B

1.2 Test Standards

The following report is prepared on behalf of the Karacus LLC in accordance with Part 2, Subpart J, and Part 15, Subparts A and B of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 15, Subpart B, and section 15.205, 15.107, and 15.109 rules.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

1.4 Test Facility

- **FCC – Registration No.: 934118**

Shenzhen SEM.Test Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files and the Registration is 934118.

- **Industry Canada (IC) Registration No.: 11464A**

The 3m Semi-anechoic chamber of Shenzhen SEM.Test Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

- **CNAS Registration No.: L4062**

Shenzhen SEM.Test Technology Co., Ltd. is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L4062. All measurement facilities used to collect the measurement data are located at 1/F, Building A, Hongwei Industrial Park, Liuxian 2nd Road, Bao'an District, Shenzhen, P.R.C (518101)

1.5 EUT Setup and Operation Mode

The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted according to the operation manual for use, more detailed description as follows:

Test Mode List:

Test Mode	Description	Remark
TM1	Camera on	/
TM2	Charging & Downloading	/

EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
USB Cable	0.75	Unshielded	Without Ferrite

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
Notebook	Lenovo	E10	LR-63C8R

Special Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
/	/	/	/

1.6 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal Date	Due Date
Spectrum Analyzer	Agilent	E4407B	MY41440400	2015-06-17	2016-06-16
Spectrum Analyzer	Rohde & Schwarz	FSP	836079/035	2015-06-17	2016-06-16
EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2015-06-17	2016-06-16
Amplifier	Agilent	8447F	3113A06717	2015-06-17	2016-06-16
Amplifier	C&D	PAP-1G18	2002	2015-06-17	2016-06-16
Broadband Antenna	Schwarz beck	VULB9163	9163-333	2015-06-17	2016-06-16
Horn Antenna	ETS	3117	00086197	2015-06-17	2016-06-16
Loop Antenna	Schwarz beck	FMZB 1516	9773	2015-06-17	2016-06-16
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2015-06-17	2016-06-16
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2015-06-17	2016-06-16
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2015-06-17	2016-06-16

2. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test Item	Result
§ 15.107 (a)	Conducted Emissions	Compliant
§ 15.109 (a)	Radiated Emissions	Compliant

N/A: not applicable

3. Conducted Emissions

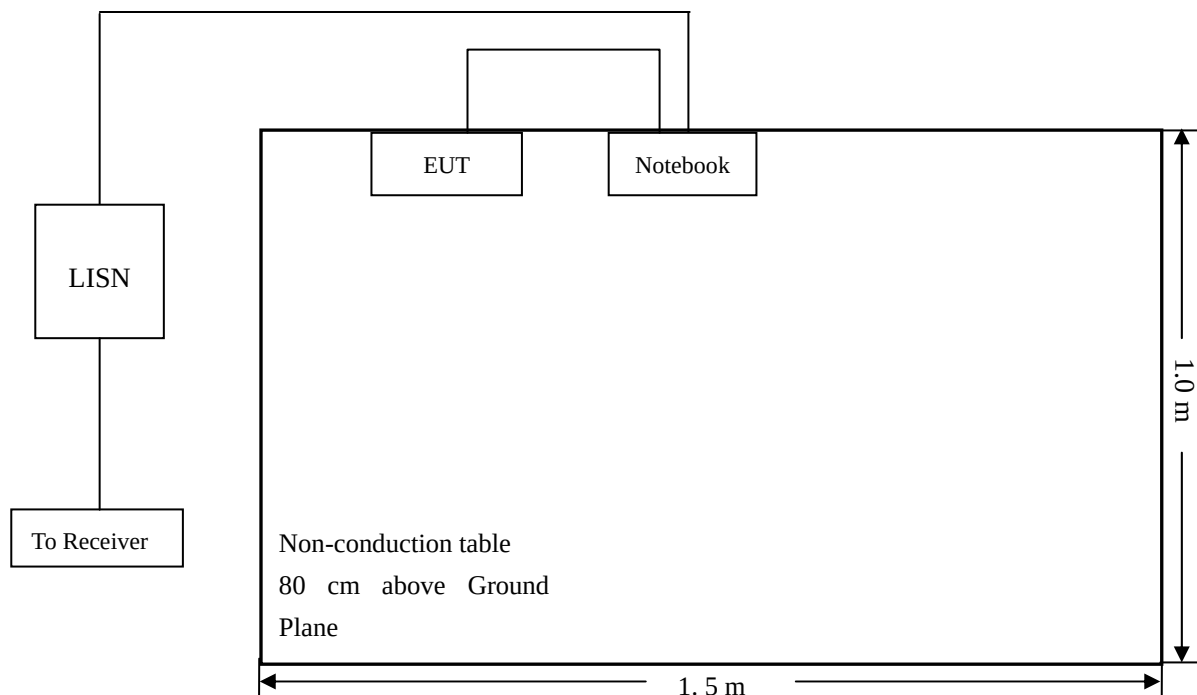
3.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is ± 2.88 dB.

3.2 Test Procedure

Test is conducting under the description of ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

3.3 Basic Test Setup Block Diagram



3.4 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	52%
ATM Pressure:	1011 mbar

3.5 Summary of Test Results/Plots

According to the data in section 3.6, the EUT complied with the FCC Part 15.107(a) Conducted margin for a Class B device, with the *worst* margin reading of:

-8.94 dB at **0.8020 MHz** in the **Neutral, Peak** detector, 0.15-30MHz

3.6 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

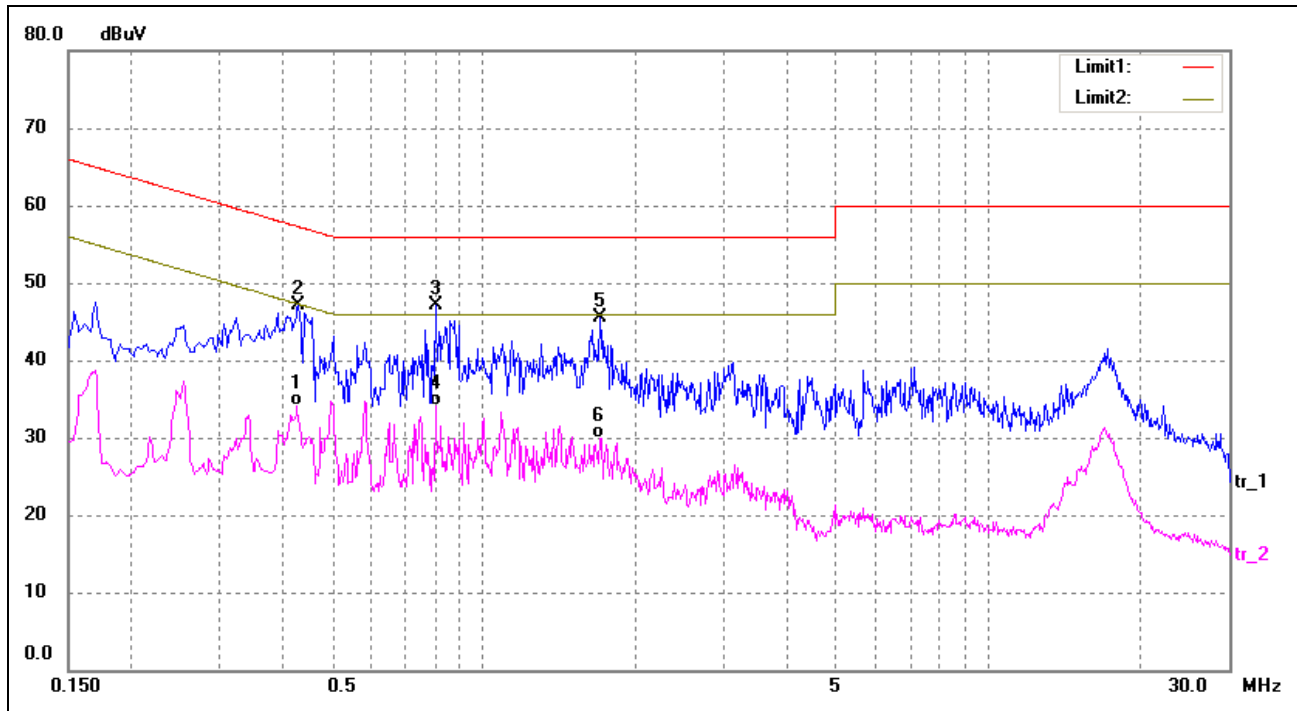
EUT: PROXIMA SMART WATCH

Tested Model: Y6

Operating Condition: TM2

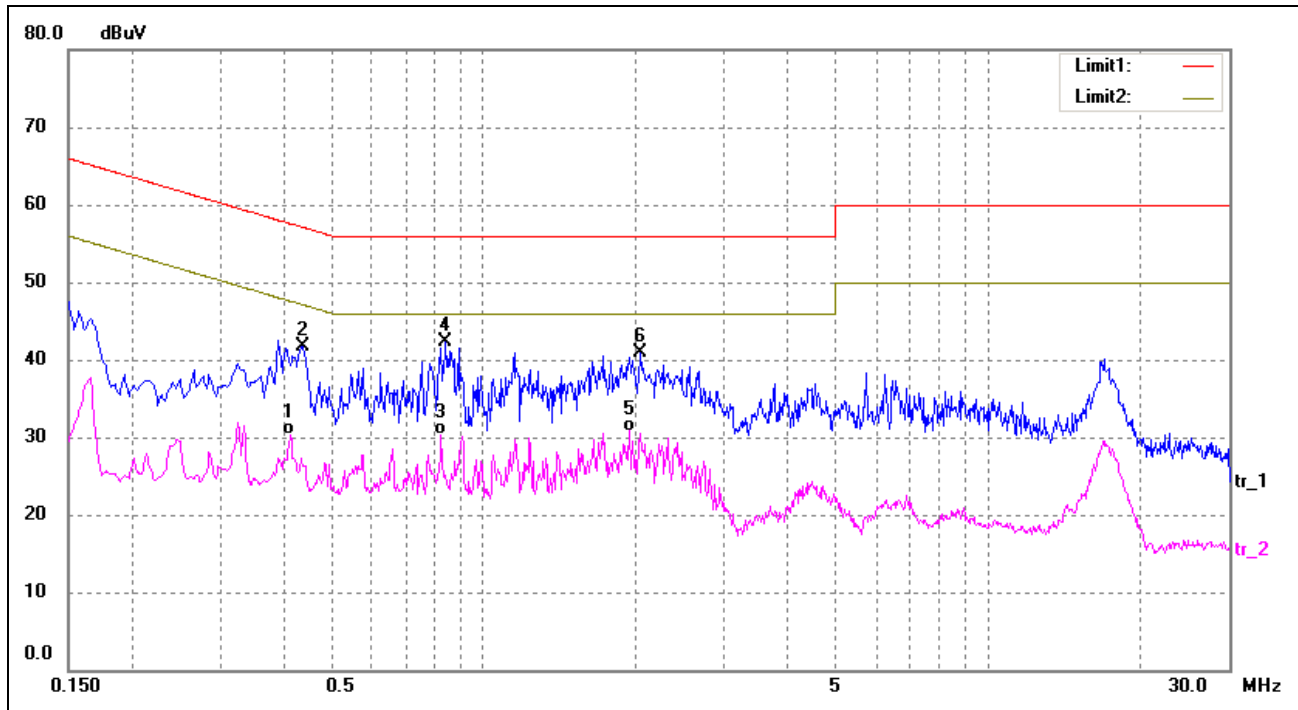
Comment: AC 120V/60Hz; USB DC 5V

Test Specification: Neutral



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.4260	21.60	12.50	34.10	47.33	-13.23	AVG
2	0.4300	34.63	12.50	47.13	57.25	-10.12	peak
3*	0.8020	34.26	12.80	47.06	56.00	-8.94	peak
4	0.8020	21.35	12.80	34.15	46.00	-11.85	AVG
5	1.7060	32.41	13.00	45.41	56.00	-10.59	peak
6	1.7060	16.99	13.00	29.99	46.00	-16.01	AVG

Test Specification: Line



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.4140	17.75	12.50	30.25	47.57	-17.32	AVG
2	0.4380	29.22	12.50	41.72	57.10	-15.38	peak
3	0.8260	17.42	12.83	30.25	46.00	-15.75	AVG
4*	0.8420	29.51	12.84	42.35	56.00	-13.65	peak
5	1.9420	17.80	13.00	30.80	46.00	-15.20	AVG
6	2.0540	27.81	13.00	40.81	56.00	-15.19	peak

4. Radiated Emissions

4.1 Measurement Uncertainty

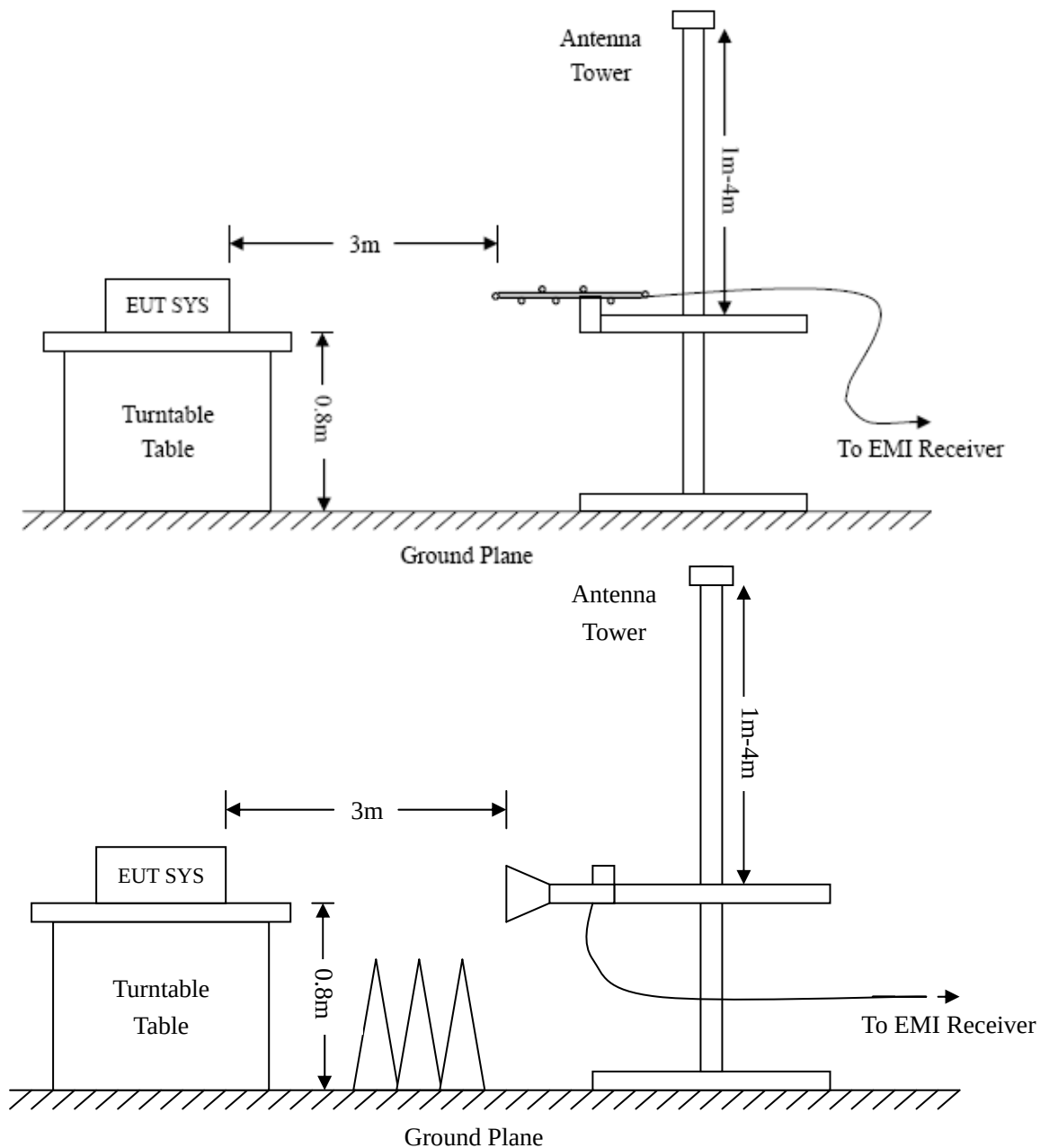
Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any radiation emissions measurement is ± 5.10 dB.

4.2 Test Procedure

The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 15.109 Limit.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.



4.3 Test Receiver Setup

Frequency :9kHz-30MHz

RBW=10KHz,

VBW =30KHz

Sweep time= Auto

Trace = max hold

Detector function = peak

Frequency :30MHz-1GHz

RBW=120KHz,

VBW=300KHz

Sweep time= Auto

Trace = max hold

Detector function = peak, QP

Frequency :Above 1GHz

RBW=1MHz,

VBW=3MHz(Peak), 10Hz(AV)

Sweep time= Auto

Trace = max hold

Detector function = peak, AV

4.4 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} - \text{Corr. Factor}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -6dB μ V means the emission is 6dB μ V below the maximum limit for a Class B device. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15.109(a) Limit}$$

4.5 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	55 %
ATM Pressure:	1011 mbar

4.6 Summary of Test Results/Plots

According to the data, the EUT complied with the FCC Part 15.109(a) rule, and had the worst margin of:

-2.12 dB at 78.5000 MHz in the Vertical polarization, TM2, 9 kHz to 2.0 GHz, 3Meters

Plot of Radiated Emissions Test Data

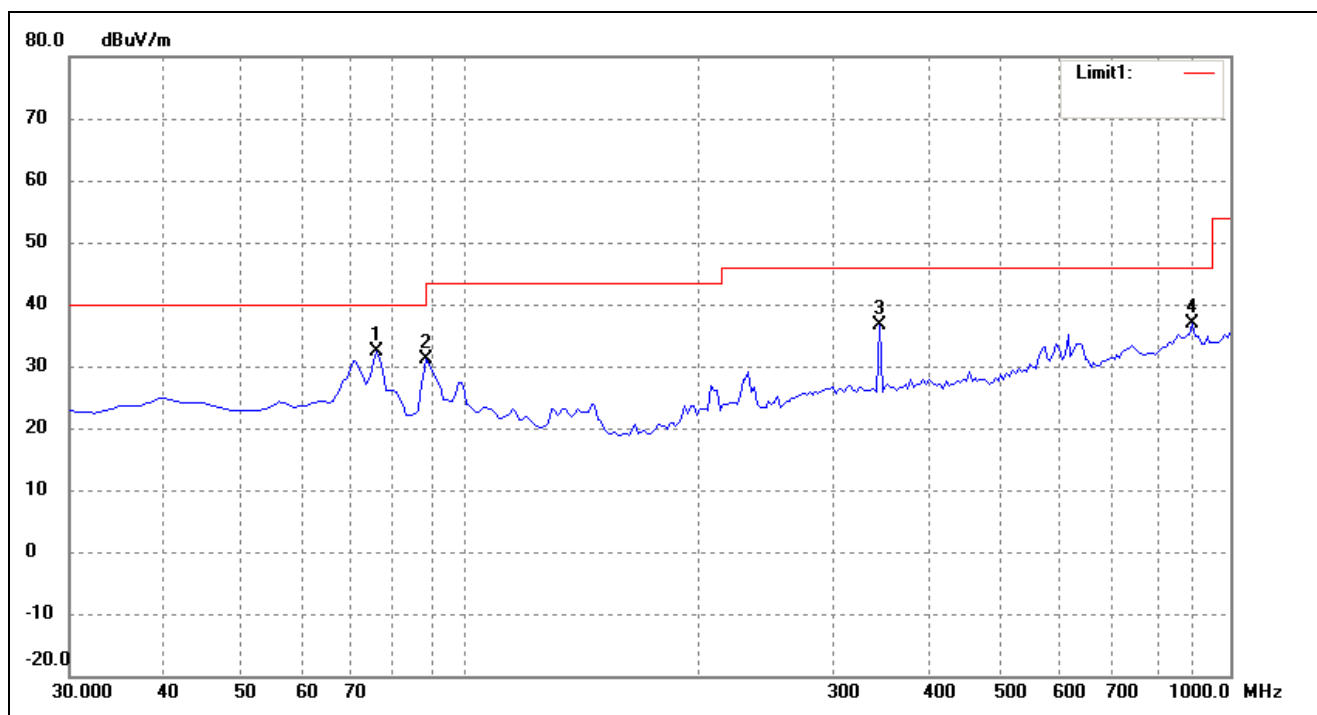
EUT: Proxima Smart Watch

Tested Model: Y6

Operating Condition: TM1

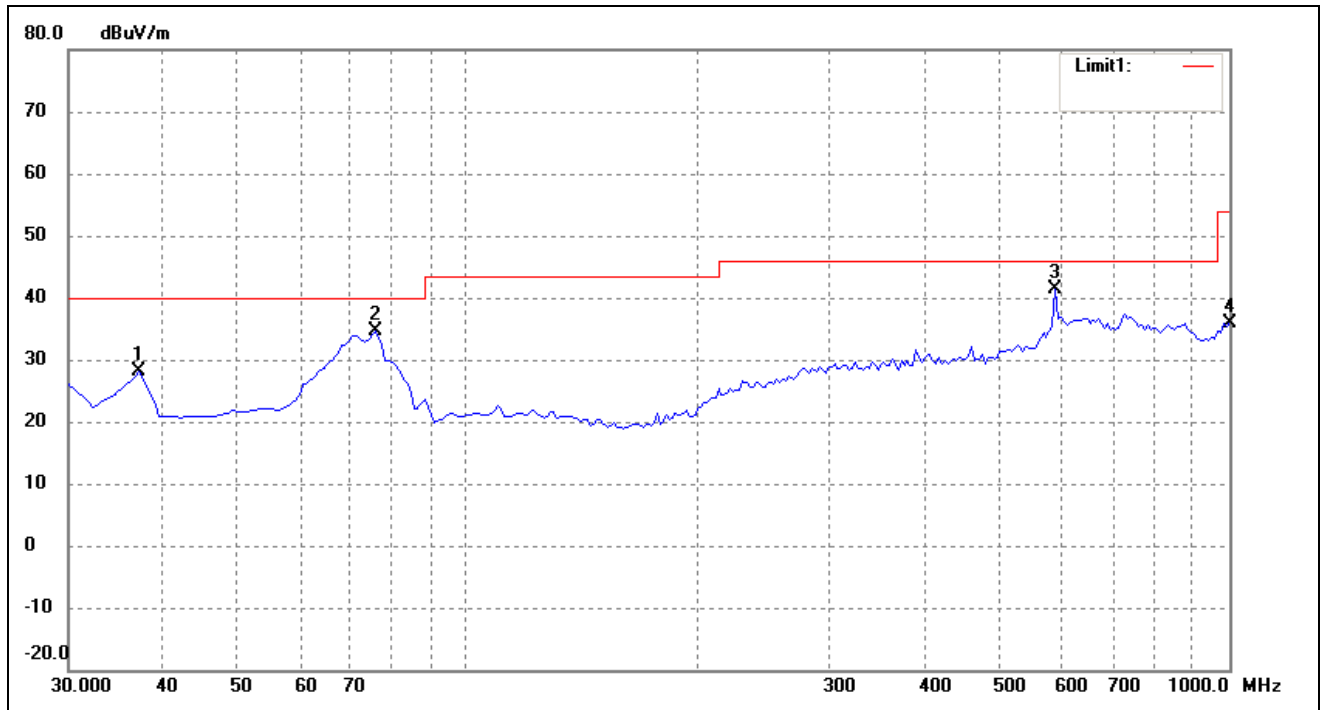
Comment: DC 3.7V

Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	76.0750	30.02	2.47	32.49	40.00	-7.51	42	100	QP
2	88.2000	27.78	3.32	31.10	43.50	-12.40	132	100	QP
3	347.6750	24.66	11.92	36.58	46.00	-9.42	168	100	QP
4	898.1499	19.90	16.95	36.85	46.00	-9.15	0	100	QP

Test Specification: Vertical

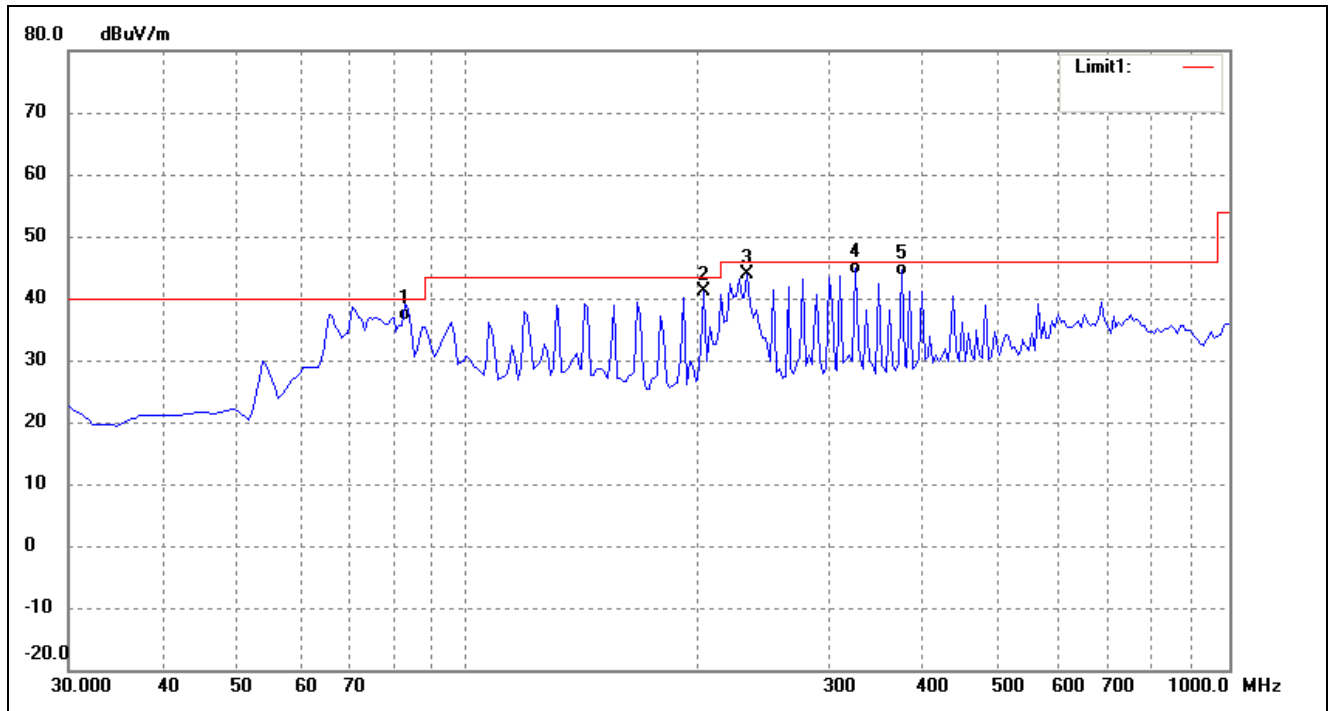


No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	37.2750	23.30	4.79	28.09	40.00	-11.91	59	100	QP
2	76.0750	32.26	2.47	34.73	40.00	-5.27	147	100	QP
3	592.6000	23.42	17.93	41.35	46.00	-4.65	236	100	QP
4	1000.0000	17.09	18.91	36.00	54.00	-18.00	158	100	QP

Plot of Radiated Emissions Test Data

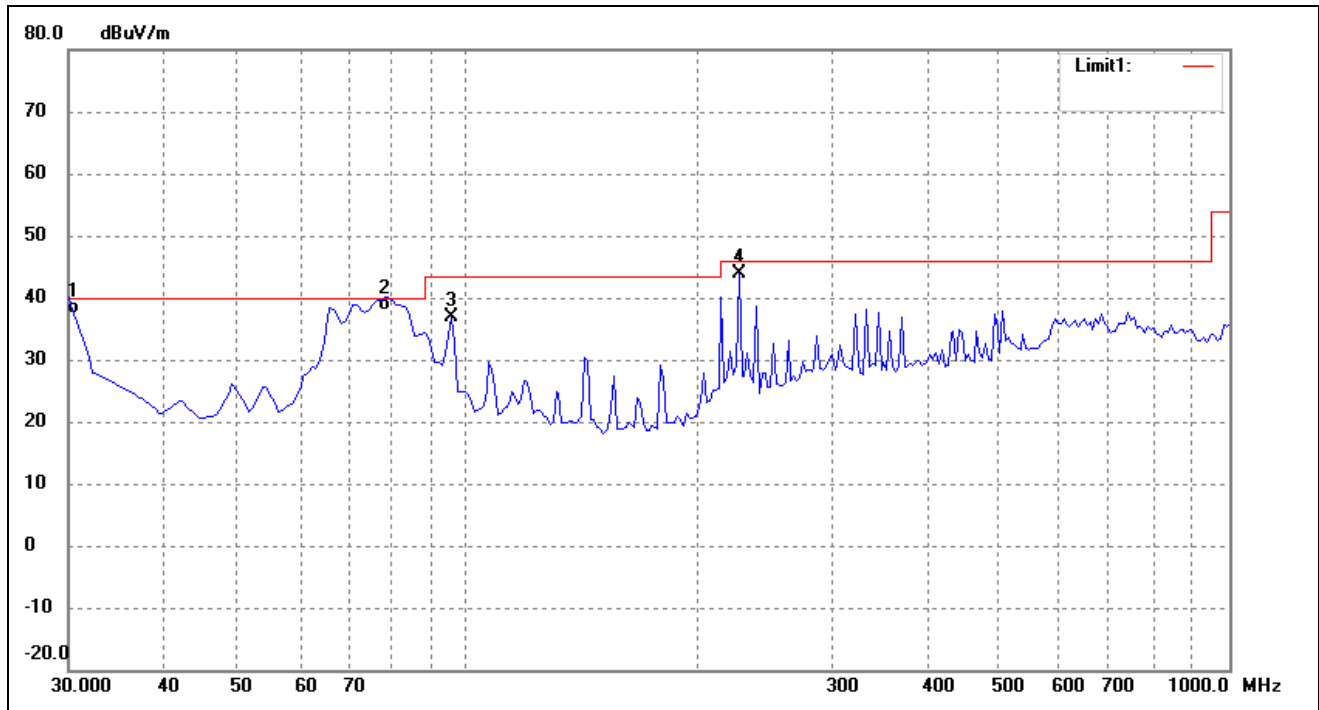
EUT: Proxima Smart Watch
 Tested Model: Y6
 Operating Condition: TM2
 Comment: AC 120V/60Hz; USB DC 5V

Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	83.3499	33.90	2.55	36.45	40.00	-3.55	42	100	QP
2	204.5999	36.44	4.70	41.14	43.50	-2.36	132	100	QP
3	233.6999	34.91	8.94	43.85	46.00	-2.15	168	100	QP
4	323.4250	31.60	12.19	43.79	46.00	-2.21	0	100	QP

Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	30.0000	33.80	3.64	37.44	40.00	-2.56	59	100	QP
2	78.5000	35.70	2.18	37.88	40.00	-2.12	147	100	QP
3	95.4750	32.35	4.44	36.79	43.50	-6.71	236	100	QP
4	228.8500	35.20	8.66	43.86	46.00	-2.14	158	100	QP

Note: Testing is carried out with frequency rang 9kHz to the 2.0GHz, which above 1GHz is close to the noise base even antenna close up to 1meter distance according the measurement of ANSI C63.4.

The measurements greater than 20dB below the limit from 9kHz to 30MHz and test data are not provided.

***** END OF REPORT *****