

Accredited Testing Laboratory under the terms of ISO/IEC 17025



# **DECLARATION OF CONFORMITY**

# FCC RULES PARTS 2 & 15

CLASS B PERSONAL COMPUTERS AND PERIPHERALS

for

**PRODUCT: RESIDENTIAL GATEWAY** 

"MODEL NAME: QUANTUM T9"

"MULTIPLE MODEL NAME: QUANTUM T7, QUANTUM T5"

**AUTHORIZED** 

# HUMAX Co., Ltd.

Humax Venture Tower Seohyun Dong, Bundang Gu271-2 463-050, SEONGANM SHI, GYEONGGI DO, REPUBLIC OF KOREA

September 13, 2017

# SUMMARY

The above equipment complies with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.4: 2014

This is only valid in connection with Test Report: E179R-D062

The ONETECH Corp., has been accredited as a Conformity Assessment Body (CAB) with designation number, KR0013 from the FCC.

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EMC-FCC:Ver(Rev.2)





# ELECTROMAGNETIC EMISSION COMPLIANCE REPORT

Test Report No.	: E179R-D062
AGR No.	: A178A-264
Applicant	: HUMAX Co., Ltd.
Address	: Humax Venture Tower Seohyun Dong, Bundang Gu271-2 463-050, SEONGANM SHI, GYEONGGI DO, REPUBLIC OF KOREA
Manufacturer	: HUMAX Co., Ltd.
Address	: Humax Venture Tower Seohyun Dong, Bundang Gu271-2 463-050, SEONGANM SHI, GYEONGGI DO, REPUBLIC OF KOREA
Type of Equipment	: Residential Gateway - Class B personal computers and peripherals
Model Name	: QUANTUM T9
Multiple Model Name	: QUANTUM T7, QUANTUM T5
Serial number	: N/A
Total page of Report	: 25 pages (including this page)
Date of Incoming	: August 17, 2017
Date of Issuing	: September 13, 2017

# **SUMMARY**

The equipment complies with the requirement of *FCC CFR 47 PART 15 SUBPART B Class B*, *Section 15.101*. This test report contains only the results of a single test of the sample supplied for the examination. It is not a general valid assessment of the features of the respective products of the mass-production.

Approved by: Reviewed by: Jae-Beom, Cho /Asst. Chief Engineer Gea/Won, Lee / Managing Director ONETECH Corp. ONETECH Corp.

EMC-005 (Rev.3)



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# **Revision History**

Rev. No.	Issued Report No.	Issued Date	Revisions	Effect Section
0	E179R-D062	September 13, 2017	Initial Issue	All

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# **1. VERIFICATION OF COMPLIANCE**

Applicant	: HUMAX Co., Ltd.
	Humax Venture Tower Seohyun Dong, Bundang Gu271-2 463-050, SEONGANM SHI, GYEONGGI DO, REPUBLIC OF KOREA
Manufacturer	: HUMAX Co., Ltd.
	Humax Venture Tower Seohyun Dong, Bundang Gu271-2 463-050, SEONGANM SHI, GYEONGGI DO, REPUBLIC OF KOREA
Factory 1	: SMTronics Co., Ltd.
	199, Seonggok-ro, Danwon-Gu, Ansan-si, Gyeonggi-Do, Korea
Factory 2	: SONGHA DIGITAL Co., Ltd.
	413-1, Dunjeon-ri, Pogok-eup, Cheoin-gu, Yongin-City, Gyeonggi-Do, Republic of Korea
Factory 3	: J & H Tech Co., Ltd.
	41-16, Cheoinseong-ro, Namsa-myeon, Cheoin-gu, Yongin-si, Gyeonggi-do, 17118, Korea
Factory 4	: Assel sp. Z o.o.
	Ul. Batalionow Chlopskich 1 83-000 Pruszcz, Poland
Factory 5	: HPL sp. Z o.o.
	Ul. Przemysłowa 4 97-400 Belchatow, Poland
Factory 6	: FLEXTRONICS ELECTRONICS TECHNOLOGY (SHENZHEN) CO LTD
	89# Yong Fu Road, Tong Fu Yu Industrial Park, Fu Yong Town, Bao An District, Shenzhen,
	518103.P.R.China.
Factory 7	: Kinpo Electronics (China) Co.,Ltd.
	SHA TOU VILLAGE,CHANG AN TOWN,DONG GUAN CITY,GUAN DONG
	PROVINCE, CHINA
Factory 8	: CAL-COMP ELECTRONICS(THAILAND) PUBLIC CO. LTD
	(Branch 00002) 138 MOO4, Petchasem Road, Sapang, Kaow-Yoi, Petchaburi 76140 Thailand



Model Name : QUANTUM T9

Brand Name : N/A

Date

: September 13, 2017

DEVICE TYPE	Class B personal computers and peripherals
E.U.T. DESCRIPTION	Residential Gateway - Unintentional Radiator
THIS REPORT CONCERNS	Original Grant
MEASUREMENT PROCEDURES	ANSI C63.4: 2014
TYPE OF EQUIPMENT TESTED	Pre-Production
KIND OF EQUIPMENT	
AUTHORIZATION REQUESTED	Declaration of Conformity
EQUIPMENT WILL BE OPERATED	ECC DADE 15 (CLASS D)
UNDER FCC RULES PART(S)	FCC PART 15 (CLASS B)
MODIFICATIONS ON THE EQUIPMENT	Neg
TO ACHIEVE COMPLIANCE	None
FINAL TEST WAS CONDUCTED ON	10 m, semi anechoic chamber

-. The above equipment was tested by ONETECH Corp. for compliance with the requirement set forth in the FCC Rules and Regulations. This said equipment in the configuration described in this report, shows the maximum emission levels emanating from equipment are within the compliance requirements.



# 2. GENERAL INFORMATION

# 2.1 Product Description

The HUMAX Co., Ltd., Model QUANTUM T9 (referred to as the EUT in this report) is a Residential Gateway. Product specification described herein was obtained from product data sheet or user's manual.

CHASSIS TYPE	Plastic			
	5 GHz	802.11a/n(HT20)	Lower-sub band	5 180 MHz ~ 5 240 MHz
	(5 150 MHz	802.11n(HT40)	Lower-sub band	5 190 MHz ~ 5 230 MHz
	~ 5 250 MHz)	802.11ac(VHT80)	Lower-sub band	5 210 MHz
OPERATING	5 GHz Band	802.11a/n(HT20)	5 745 MHz ~ 5 825 M	MHz
FREQUENCY	(5 725 MHz	802.11n(HT40)	5 755 MHz ~ 5 795 MHz	
	~ 5 850 MHz)	802.11ac(VHT80)	5 775 MHz	
		802.11b/g/n(HT20)	2 412 MHz ~ 2 472 MHz	
	2.4 GHz Band	802.11n(HT40)	2 422 MHz ~ 2 462 M	MHz
	EUT	DC 12 V=, 2.5 A		
ELECTRICAL RATING		Input: 100-240 V~, 50/60 Hz		
	AC ADAPTER Output: 12 V=, 2.5 A		Δ	
EXTERNAL TERMINALS	DC IN, WAN, LAN 1, LAN 2, USB			

### **2.2 Model Differences**

The following lists consist of the added model and their differences.

Model Name	Differences	Tested
QUANTUM T9	Basic Model (2.4 GHz: 3Tx3Rx, 5 GHz: 4Tx4Rx)	Ŋ
QUANTUM T7	These models are identical to the basic model except for the Antenna. (2.4 GHz: 3Tx3Rx, 5 GHz: 3Tx3Rx)	
QUANTUM T5	These models are identical to the basic model except for the Antenna. (2.4 GHz: 2Tx2Rx, 5 GHz: 3Tx3Rx)	

Note: 1. Applicant consigns only basic model to test. Therefore this test report just guarantees the units, which have been tested.

2. The Applicant/manufacturer is responsible for the compliance of all variants.

# 2.3 Related Submittal(s) / Grant(s)

Original submittal only



# 2.4 Test System Details

The model numbers for all the equipments, which were used in the tested system, is:

Model	Manufacturer	Description	Connected to
QUANTUM T9	HUMAX Co., Ltd.	Residential Gateway (EUT)	-
ADS-30FD-12 12030E	SHENZHEN HONOR ELECTRONIC CO., LTD.	Adapter	EUT
PLSU6K-008004	TOSHIBA	Notebook PC (1)	EUT
80XH	LENOVO PC HK Limited	Notebook PC (2)	EUT
_	Sandisk	USB Memory	EUT

### 2.5 Test Methodology

Both conducted and radiated testing was performed according to the procedures in ANSI C63.4: 2014. Radiated testing was performed at a distance of 10 m from EUT to the antenna.

#### 2.6 Test Facility

The Onetech Corp. has been designated to perform equipment testing in compliance with ISO/IEC 17025.

The Electromagnetic compatibility measurement facilities are located at 43-14, Jinsaegol-gil, Chowol-eup, Gwangju-si, Gyeonggi-do, 12735, Korea.

-. Site Filing:

VCCI (Voluntary Control Council for Interference) - Registration No. R-4112/ C-14617/ G-10666/ T-1842

IC (Industry Canada) - Registration No. Site# 3736A-3

-. Site Accreditation:

KOLAS (Korea Laboratory Accreditation Scheme) - Accreditation NO. KT085

FCC (Federal Communications Commission) - Accreditation No. KR0013

RRA (Radio Research Agency) - Designation No. KR0013



# **3. SYSTEM TEST CONFIGURATION**

### **3.1 Justification**

This device was configured for testing in a typical way as a normal customer is supposed to be used. During the test, the following components were installed inside of the EUT.

DEVICE TYPE	MANUFACTURER	MODEL/PART NUMBER	FCC ID
MAIN BOARD	N/A	N/A	N/A

### 3.2 Mode of operation during the test

-. The EUT was connected two notebook pc to WAN, LAN port each and then checked the ping test during the test.

-. Input power condition during the measurements was AC 120 V~, 60 Hz.

#### **3.3 Cable Description**

Ports Name	Shielded	Ferrite Bead	Metal Shell	Length (m)	Connected to
DC IN	Y	Ν	Ν	1.5	Adapter
WAN	Ν	Ν	Ν	3.0	Notebook PC (2)
LAN (1)	Ν	Ν	Ν	3.0	Notebook PC (1)
LAN (2)	Ν	N	Ν	3.0	LINE
USB	Ν	Ν	Ν	-	USB Memory

#### **3.4 Equipment Modifications**

-. None.

### 3.5 Configuration of Test System

Line Conducted Test: The EUT was connected to LISN. Preliminary Power line Conducted Emission test was performed by using the procedure in ANSI C63.4: 2014 7.3.3 to determine the worse operating conditions.

Radiated Emission Test: Preliminary radiated emission test was conducted using the procedure in ANSI C63.4: 2014 8.3.1.1 to determine the worse operating conditions. Final radiated emission test was conducted at 10 m semi anechoic chamber.



# 4. PRELIMINARY TEST

# 4.1 AC Power line Conducted Emission Test

During Preliminary Test, the following operating mode was investigated.

Operation Mode	The Worst operating condition (Please check one only)
WAN, LAN Ping Test	Х

# 4.2 Radiated Emission Test

During Preliminary Test, the following operating mode was investigated.

Operation Mode	The Worst operating condition (Please check one only)
WAN, LAN Ping Test	Х



# **5. FINAL RESULT OF MEASURMENT**

Preliminary test was done in normal operation mode. And the final measurement was selected for the maximized emission level.

#### **5.1 Conducted Emission Test**

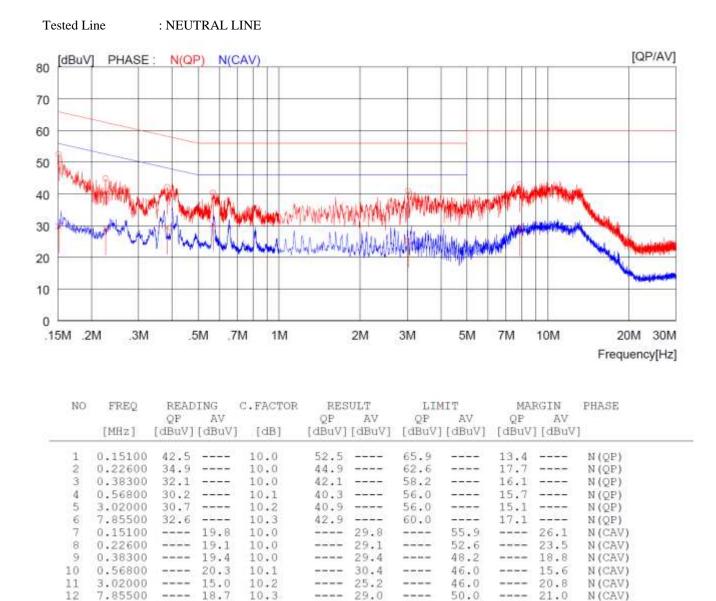
#### 5.1.1 Test data Humidity Level : 51.0 % R.H. Temperature: 23.9 °C Limits apply to : FCC CFR 47, PART 15, SUBPART B, SECTION 15.107 (a) Type of Test : CLASS B Result : PASSED BY 10.2 dB at 0.39500 MHz under CISPR-Average detector mode on HOT Line EUT : QUANTUM T9 Date: August 22, 2017 Detector : Q.P (6 dB Bandwidth: 9 kHz) Tested Line : HOT LINE [QP/AV] [dBuV] PHASE : H(QP) H(CAV) 80 70 60 50 40 30 20 10 0 .15M .2M .7M 5M 7M 10M .3M .5M 1M 2M 3M 20M 30M

READING RESULT MARGIN PHASE NO FREQ C.FACTOR LIMIT QP AV QP AV QP AV QP AV [MHz] [dBuV] [dBuV] [dB] [dBuV][dBuV] [dBuV] [dBuV] [dBuV][dBuV] 10.0 0.15100 65.9 14.7 H(QP) 1 41.2 51.2 ---------2 0.25900 34.0 ----10.0 44.0 ----61.5 17.5 H(QP) \_\_\_\_ \_\_\_\_ 0.39500 ----44.9 ----3 34.9 10.0 58.0 13.1 H(QP) 3.03600 30.8 56.0 15.0 10.2 41.0 H(OP) 4 ---------7.79500 5 31.6 -----10.3 41.9 -----60.0 ----18.1 H(QP) 6 10.24000 32.1 10.4 42.5 60.0 17.5 H(QP) 55.9 0.15100 21.0 31.0 10.0 24.9 H (CAV 8 0.25900 51.5 H(CAV) 22.2 10.0 32.2 19.3 37.8 0.39500 27.8 9 10.0 48.0 H (CAV) ----10.2 10 3.03600 -12.7 10.2 - - - - -22.9 . . . . 46.0 23.1 H (CAV) 7.79500 25.7 50.0 15.4 10.3 24.3 H (CAV) 11 12 10.24000 21.5 31.9 50.0 10.4 18.1 H (CAV)

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Frequency[Hz]





Remark: Margin (dB) = Limit - Level (Result)

The emission level in above table is included the transducer factor that means insertion loss (LISN), cable loss and attenuator.

Tested by: Song-Ho, Moon / Engineer



# **5.2 Radiated Emission Test**

The following table shows the highest levels of radiated emission on both polarizations of horizontal and vertical.

#### 5.2.1 Test data for below 1 GHz

5.2.1.1 Test data										
Humidity Level	: <u>58.2 % R.H.</u> Temperature: <u>23.4 °C</u>									
Limits apply to	: FCC CFR 47, PART 15, SUBPART B, SECTION 15.109 (a)									
Type of Test	: <u>CLAS</u>	<u>S B</u>								
Result	: <u>PASSI</u>	ED BY 4.5	5 dB at 60	.070 MI	Hz					
EUT	: QUAN	TUM T9								Date: August 31, 2017
Frequency Range	: 30 MH	Iz ~ 1 000	MHz							
Detector	: Q.P (6	dB Bandy	width: 120	kHz)						
Distance	: 3 m									
70 <sup>[dB</sup>	uV/m]	< <qp< td=""><td>DATA&gt;&gt;</td><td></td><td></td><td></td><td>HO</td><td>RIZONTAL</td><td>/×VER</td><td>TICAL</td></qp<>	DATA>>				HO	RIZONTAL	/×VER	TICAL
60	_									
50									_	E.
			-							
40									*	- d'
30	and	- Martin	A.M.		131	N 1	, the	I. MILL	alida	with a
20		Auger .	WWW	DA AN	AN	MAR A	ARRIN	AMAR VA	in south the	
10	_			Mark	r v	10.10			_	
0										
30M	50	0M 70M	100M	)	2001	1 30	OM	500M	700M Frequen	1G cy[Hz]
No.	FREQ F		ANT LOSS CTOR	GAIN	RESULT	LIMIT	MARGIN	ANTENNA	TABLE	
	[MHz]	[dBuV]	[dB] [dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	(cm)	[DEG]	
1	Jorizontal …	<del>(22</del> )								
1	900.079	38.8 5	22.1 7.0	32.6	35.3	46.0	10.7	100	0	
1	Vertical ·····	5								
2 3 4 5 6	$\begin{array}{c} 30.000 \\ 50.370 \\ 60.070 \\ 101.780 \\ 666.316 \end{array}$	51.1 1 53.5 1 47.9 1	$     \begin{array}{ccccccccccccccccccccccccccccccccc$	33.1 33.1 33.1 33.0 33.5	34.2 33.8 35.5 29.5 38.0	$   \begin{array}{r}     40.0 \\     40.0 \\     40.0 \\     43.5 \\     46.0   \end{array} $	$5.8 \\ 6.2 \\ 4.5 \\ 14.0 \\ 8.0$	100 200 100 200 200	$23 \\ 3 \\ 111 \\ 72 \\ 114$	

Remark: Margin (dB) = Limit – Result and Result = Reading Quasi-Peak + Antenna Factor + Loss – Gain Loss and Gain in above table means Cable Loss and Pre-amplifier gain.

Tested by: Song-Ho, Moon / Engineer

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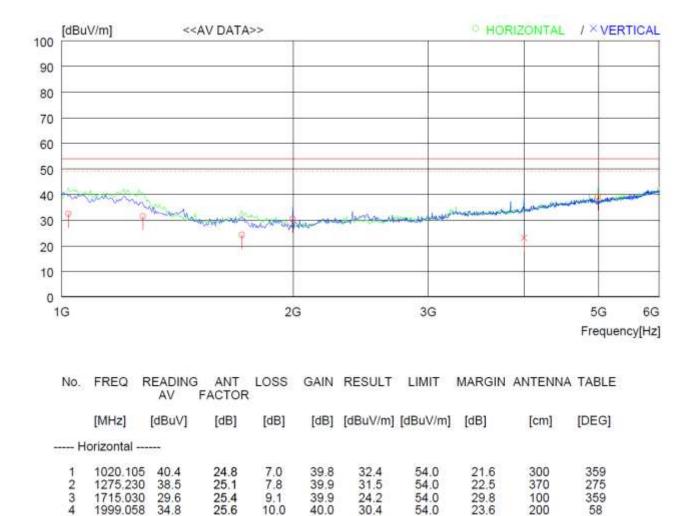
# 5.2.2 Test data for above 1 GHz

# 5.2.2.1 Test data

Humidity Level Limits apply to Type of Test Result	: <u>52.4 % R.H.</u> Temperature: <u>23.4</u> : <u>FCC CFR 47, PART 15, SUBPART B, SECTION 15.109 (g)</u> : <u>CLASS B</u> : <u>PASSED BY 14.9 dB at 4 990.001 MHz under CISPR-Average mode</u>					
EUT	: QUANTUM T9	Date: September 11, 2017				
Frequency Range	: 1 000 MHz ~ 6 000 MHz					
Detector	: Peak and CISPR Average	e (6 dB Bandwidth: 1 MHz)				
Distance	: 3 m					
[dBuV/m]	< <peak data="">&gt;</peak>	· HORIZ	CONTAL / XVERTICAL			
80						
70						
0.002						
60						
50			10			
40	and a second and a s		hard and the second			
30	the and want we have	With the said with the Million of the second statements				
20						
10						
0						
1G		2G 3G	5G 6G Frequency[Hz]			
No. FR		GAIN RESULT LIMIT MARGIN	ANTENNA TABLE			
[MI	PEAK FACTOR [z] [dBuV] [dB] [dB]	[dB] $[dBuV/m]$ $[dBuV/m]$ $[dB]$	[cm] [DEG]			
Horizo	ntal					
$     \begin{array}{ccc}       2 & 12' \\       3 & 17' \\       4 & 200     \end{array} $	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$			
6 39	5.000 34.7 29.7 14.7	40.5 38.6 74.0 35.4	200 359			
		sult = Reading Peak + Antenna Fa				

Remark: Margin (dB) = Limit – Result and Result = Reading Peak + Antenna Factor + Loss – Gain Loss and Gain in above table means Cable Loss and Pre-amplifier gain.





----- Vertical ------

4990.001

32.2

31.2

16.3

5

6 3995.044 19.3 29.6 14.7 40.5 23.1 54.0 30.9 200 359

39.1

40.6

54.0

Remark: Margin (dB) = Limit – Result and Result = Reading CISPR Average + Antenna Factor + Loss – Gain Loss and Gain in above table means Cable Loss and Pre-amplifier gain.

200

219

14.9

Tested by: Song-Ho, Moon / Engineer



# 6. FIELD STRENGTH CALCULATION

Meter readings are compared to the specification limit correcting for antenna and cable losses.

+ Meter reading	$(dB\mu V)$				
+ Cable Loss	(dB)				
+ Antenna Factor	(dB/m)				
= Corrected Reading	$(dB\mu V/m)$				
Margin (dB)					
Specification Limit	$(dB\mu V/m)$				
- Corrected Reading	(dBµV/m)				
= dB Relative to Spec	(± dB)				



# 7. LIST OF TEST EQUIPMENT

No.	EQUIPMENTS	MFR.	MODEL	SER. NO.	LAST CAL	DUE CAL	USE
1.		R & S	ESCI	101420	Apr. 03, 2017	One Year	
2.			ESPI	101278	Nov. 01, 2016	One Year	
3.	Test receiver		ESCI	101013	Apr. 04, 2017	One Year	
4.			ESR	101470	Feb. 08, 2017	One Year	
5.			ESI	8355336/011	Nov. 02, 2016	One Year	
6.	Pulse Limiter	ROHDE & SCHWARZ	ESH3Z2	357.8810.52	Jun. 13, 2017	One Year	
7.		Sonoma	310N	312544	Apr. 04, 2017	One Year	
8.	Amplifier	Instrument	310N	312545	Apr. 04, 2017	One Year	
9.		Hewlett Packard	8447D	2944A07777	Apr. 04, 2017	One Year	
10.	TRILOG Broadband		VULB9163	9163-419	Aug. 05, 2016	Two Years	
11.	Antenna	Schwarzbeck	VULB9163	9163-255	May. 20, 2016	Two Years	
12.	Horn Antenna	Schwarzbeck	BBHA9120D	BBHA9120D295	Aug 16, 2017	Two Years	
13.	Signal Conditioning unit	ROHDE & SCHWARZ	SCU 18	102209	May 30,2017	One Year	
14.	_		2025/2	9109-1867	Apr. 07, 2017	One Year	
15.		EMCO	3825/2	9109-1869	Apr. 06, 2017	One Year	
16.			NSLK 8126	8126-480	Nov. 02, 2016	One Year	
17.	LISN	Schwarzbeck	NSLK 8126	8126-404	Apr. 03, 2017	One Year	
18.			NSLK 8126	8126-479	Nov. 02, 2016	One Year	
19.		AFJ	LT 32C	32031306157	Apr. 04, 2017	One Year	
20.	Controller	Innco System	CO3000	CO3000/904 /37211215/L	N/A	N/A	
21.			CO2000	CO2000/619	N/A	N/A	
22.			DT3000	930611	N/A	N/A	
23.	Turn Table	Innco System	DT5000-3t- Teagplatten	N/A	N/A	N/A	
24.	Antonno Marta	Immed Contract	MA-4000XPET	MA4000/509 /37211215/L	N/A	N/A	
25.	Antenna Master	Innco System	MA4000-EP	MA4000/332 /27030611/L	N/A	N/A	

Remark: Mark ■ mean used equipment.



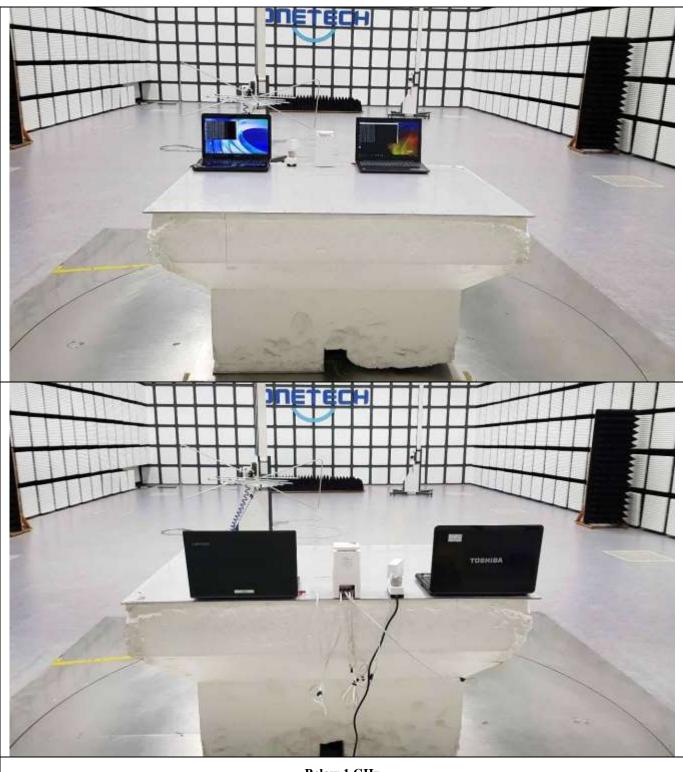
# **APPENDIX I - TEST SET-UP PHOTOS: (Conducted emission)**



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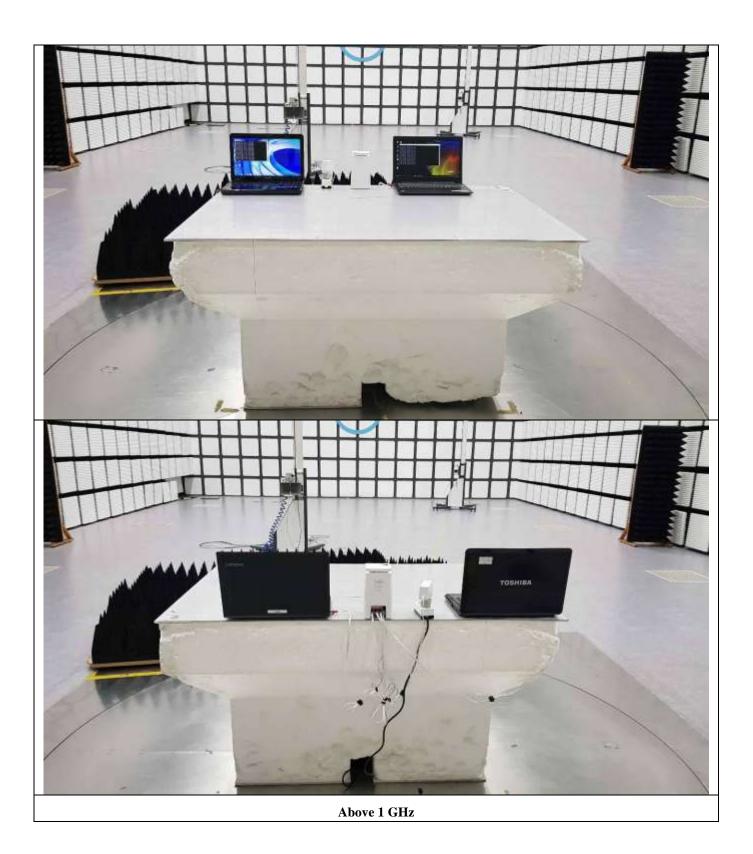
# **APPENDIX II - TEST SET-UP PHOTOS: (Radiated emission)**



Below 1 GHz

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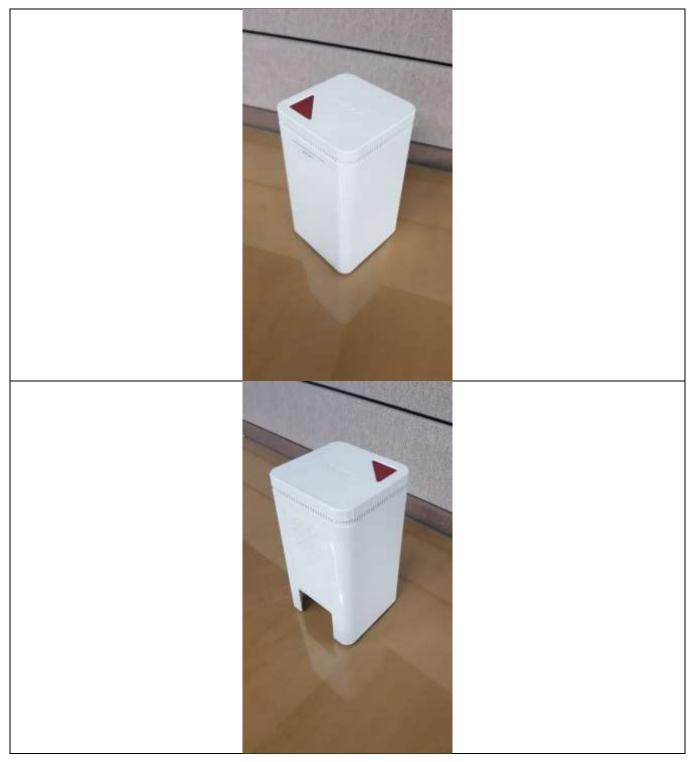


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# **APPENDIX III - PHOTOGRAPHS REPORT**



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# **APPENDIX IV - IDENTIFICATION LABEL**

(Proposed format to be included in the user's manual)

# **DECLARATION OF CONFORMITY**

PRODUCT NAME	: Residential Gateway
MODEL NUMBER	: QUANTUM T9
FCC RULES	: Tested to comply with FCC Part 15, Class B
OPERATING ENVIRONMENT	: FOR HOME OR OFFICE USE

#### FCC COMPLIANCE STATEMENT:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

### **INFORMATION TO USER:**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one more of the following measures:

- -. Reorient or relocate the receiving antenna.
- -. Increase the separation between the equipment and receiver.
- -. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- -. Consult the dealer or an experienced radio/TV technician for help.

### CAUTION:

Any changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment

# THE PARTY RESPONSIBLE FOR PRODUCT COMPLIANCE

### (YOUR CORPORATE NAME)

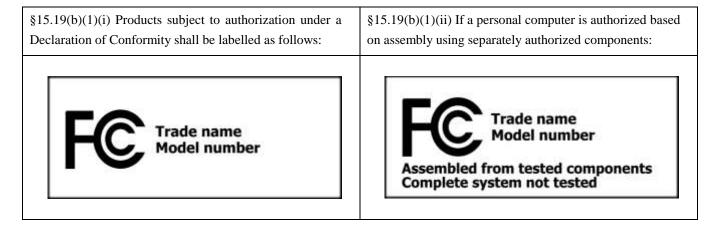
### (STREET, CITY, STATE, USA)

#### (TELEPHONE NO: (XXX) YYY-ZZZZ)

(ABOVE NAME AND ADDRESS MUST BE LOCATED WITHIN THE UNITED STATES)

# **APPENDIX V - DECLARATION OF CONFORMITY LABELLING REQUIREMENTS**

The labelling requirements for a device subject to the DoC procedure are specified in Section 15.19(b). The label should include the FCC logo along with the Trade Name and Model Number, which satisfies the unique identifier requirement of Section 2.1074 if it represents the identical equipment tested for DoC compliance. For personal computers assembled from authorized components, the following additional text must also be included: "Assembled from tested components,"



When the device is so small or for such use that it is not practicable to place the statement specified under paragraph 15.19(b)(1) on it, such as for a CPU board or a plug-in circuit board peripheral device, the text associated with the logo may be placed in a prominent location in the instruction manual or pamphlet supplied to the user. However, the unique identification (trade name and model number) and the logo must be displayed on the device.

The label shall not be a stick-on, paper label. The label on these products shall be permanently affixed to the product and shall be readily visible to the purchaser at the time of purchase. "Permanently affixed" means that the label is etched, engraved, stamped, silkscreened, indelibly printed or otherwise permanently marked on a permanent attached part of the equipment or on a nameplate of metal, plastic, or other material fastened to the equipment by welding, riveting or a permanent adhesive. The label must be designed to last the expected lifetime of the equipment in the environment in which the equipment may be operated and must not be readily detachable.