



## EMC TEST REPORT For FCC

Test Report No. : KES-E1-16T0215-R1  
Date of Issue : Jul. 21, 2021  
Product name : NETWORK CAMERA  
Model/Type No. : QNO-7030R  
Variant Model : QNO-7020R, QNO-7010R  
Applicant : Hanwha Techwin Co., Ltd.  
Applicant Address : 6, Pangyo-ro 319Beon-gil, Bundang-gu, Seongnam-si,  
Gyeonggi-do, Republic of Korea  
Manufacturer : 1. HANWHA TECHWIN SECURITY VIETNAM CO.,LTD.  
2. D-TECH CO.,LTD.  
Manufacturer Address : 1. Lot O-2, Que Vo Industrial Zone extended area,  
Nam Son commune, Bac Ninh city, Bac Ninh province, Vietnam  
2. 173-25, Saneop-ro, Gwonseon-gu, Suwon-si, Gyeonggi- do,  
Korea (Suwon Industrial Complex)  
Equipment authorization : ☐ Declaration of Conformity  
☒ Verification  
☐ Certification  
Date of Receipt : May. 02, 2016  
Test date : May. 09, 2016  
Test Results : ☒ In Compliance ☐ Not in Compliance

Tested by

Hyo Jin, Kim  
EMC Test Engineer

Reviewed by

Dong-Hun, Jang  
EMC Technical Manager

This test report is not related to KS Q ISO/IEC 17025 and KOLAS.



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### REPORT REVISION HISTORY

Date	Test Report No.	Revision History
May. 17, 2016	KES-E1-16T0215	Issued
Jul. 21, 2021	KES-E1-16T0215-R1	Model name/Address/Manufacturer change at customer's request

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## 1.0 General Product Description

### Main Specifications of EUT are:

	QNO-7030R
<b>Video</b>	
Imaging Device	1/3" 4M CMOS
Total Pixels	2720x1536
Effective Pixels	2688x1520
Scanning System	Progressive
Min. Illumination	Color : 0.3Lux, B/W : 0Lux
<b>Lens</b>	
Focal Length (Zoom Ratio)	Fixed 6mm (F2.2)
Max. Aperture Ratio	F2.2
Angular Field of View	D 62° / H 53° / V 31°
Min. Object Distance	-
Lens Type	Fixed
Mount Type	Board type
<b>Pan / Tilt / Rotate</b>	
Pan Range	0
Tilt Range	0
Rotate Range	0
<b>Operational</b>	
IR Viewable Length	30m
Camera Title	Off / On (Displayed up to 20 characters per line) - W/W : English/Numeric/Special Characters - China : English/Numeric/Special/Chinese Characters - Common : Multi-line (Max 5), Color (Grey/Green/Red/Blue/Black/White), Transparency, Auto Scale by Resolution
Day & Night	True Day & Night
Backlight Compensation	Off / BLC
Highlight Compensation	(미지원)
Wide Dynamic Range	120dB
Digital Noise Reduction	SSNR(Off / On)
Motion Detection	Off / On (4ea polygon zones)
Privacy Masking	Off / On (6ea rectangler zones)
Gain Control	Off / Low / Middle / High
White Balance	ATW / AWC / Manual / Indoor / Outdoor
LDC(Lens distortion control)	On/Off (5 levels with Min/Max)
Electronic Shutter Speed	Minimum / Maximum / Anti flicker
Flip / Mirror	Flip / Mirror / Hallway view
Intelligent Video Analytics	Motion Detection with metadata, Tampering, Defocus
Alarm I/O	Input 1 / Output 1
Alarm Triggers	Motion detection, Tampering Detection, SD card error, NAS error, Alarm input, Defocus detection
Alarm Events	File upload via FTP and E-Mail Local storage recording at Event Notification via E-Mail External output
<b>Network</b>	
Ethernet	RJ-45 (10/100BASE-T)
Video Compression Format	H.265, H.264, MJPEG
Resolution	2592x1520, 2560x1440(16:9) / 2304x1296 / 1920x1080 / 1280x1024 / 1280x960 / 1280x720 / 1024x768 / 800x600 / 800x450 / 720x576 / 720x480 / 640x480 / 640x360 / 320x240
Max. Framerate	H.265 : Max 20fps at 4M, Max 30fps at 2M all resolutions H.264 : Max 20fps at 4M, Max 30fps at 2M all resolutions MJPEG : Max 15fps @ all resolution.

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Smart codec	Wise Stream
Video Quality Ajustment	H.265 : Target Bitrate Level Control H.264 : Target Bitrate Level Control MJPEG : Quality Level Control
Bitrate control method	H.265 : CBR or VBR H.264 : CBR or VBR MJPEG : VBR
Streaming Capability	Multiple Streaming(Up to 3 Profiles)
Audio I/O	Line in
Audio Compression Format	G.711 u-law /G.726 Selectable G.726(ADPCM) : 8KHz, G.711 : 8KHz G.726 : 16Kbps, 24Kbps, 32Kbps, 40Kbps
Audio Communication	Uni-directional
IP	IPv4, IPv6
Protocol	TCP/IP, UDP/IP, RTP(UDP), RTP(TCP), RTCP,RTSP, NTP, HTTP, HTTPS, SSL/TSL, DHCP, PPPoE, FTP, SMTP, ICMP, IGMP, SNMPv1/v2c/v3(MIB-2), ARP, DNS, DDNS, QoS, PIM-SM, UPnP, Bonjour
Security	HTTPS(SSL) Login Authentication Digest Login Authentication IP Address Filtering User access Log 802.1X Authentication
Streaming Method	Unicast / Multicast
Max. User Access	6 users at Unicast Mode
Edge storage	Micro SD/SDHC/SDXC Max 128G, NAS - Motion images recorded in the SD memory card can be downloaded - Manual recording at Local PC
Application Programming Inter	ONVIF Profile S, G SUNAPI(HTTP API)
Webpage Language	English, French, German, Spanish, Italian, Chinese, Korean, Russian, Japanese, Swedish, Danish, Portuguese, Turkish, Polish, Czech, Rumanian, Serbian, Dutch, Croatia, Hungary, Greek, Finnish, Norwegian
Web Viewer	Supported OS: Windows 7, 8, 10, Mac OS X 10.8, 10.9, 10.10, 10.11 [Non-plugin Webviewer] Supported Browser: Google Chrome 47, MS Edge 20 Support Codec : Video-H.264, MJPEG (Max. 1M 15fps), Audio-G.711 [Plug-in Webviewer] Supported Browser : MS Explore 11 , Mozilla Firefox 43, Apple Safari 9 * Mac OS X only
Central Management Software	SmartViewer
Pixel Counter	Support ( plug-in viewer only )
<b>Environmental</b>	
Operating Temperature / Humi	-30°C ~ +55°C / Less than 90% RH * Start up should be done at above -20°C
Storage Temperature / Humidi	-30°C ~ +60°C (-22°F ~ +140°F) / Less than 90% RH
Ingress Protection	IP66
Vandal Resistance	IK10
<b>Electrical</b>	
Input Voltage / Current	PoE(IEEE802.3af, Class3), DC 12V
Power Consumption	Max.6.6W(PoE), Max.5.5W(DC12V)
<b>Mechanical</b>	
Color / Material	Gray / Metal
Dimension (WxHxD)	φ70.0x246mm
Weight	730g

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## 1.1 Test Voltage & Frequency

Unless indicated otherwise on the individual data sheet or test results, the test voltage and frequency was as indicated below.

Voltage ☐ 100 Vac ☐ 110 Vac ☐ 120 Vac ☒ PoE ☒ 12 Vdc  
Frequency ☐ 50 Hz ☐ 60 Hz ☐ Hz

## 1.2 Variant Model Differences

Variant Model	Differences
QNO-7020R	Focus Length differences
QNO-7010R	

## 1.3 Device Modifications

Not applicable

## 1.4 Equipment Under Test

Description	Model Number	Serial Number	Manufacturer	Remarks
NETWORK CAMERA	QNO-7030R	-	HANWHA TECHWIN SECURITY VIETNAM CO.,LTD.	E.U.T

## 1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
PoE	HICC-P-2100XIRV	15030100002	Honeywell	-
Notebook	NT630Z5J	JK9091EF400142 M	Samsung Electronics Suzhou Computer Co., Ltd.	-
NotebookK Adapter	A13-040N2A	CN60BA4400313 ADON843K0200	Chicony Power Technology (suzhou)Co., Ltd.	-
Alarm	SIE-0001 DO	C54167JB601268 F	SAMSUNG TECHWIN CO., LTD.	-
Micro SD card	-	-	Transcend	4 GB
MIC	CMK-303	-	CAMAC	-



## 1.6 External I/O Cabling

- DC 12 V Mode

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
NETWORK CAMERA (E.U.T)	Alarm IN	Alarm	Alarm IN	3.0	U
	RJ-45	Notebook	RJ-45	4.0	U
	Micro SD card SLOT	Micro SD card	Micro SD card SLOT	-	-
	Audio In	MIC	Audio In	1.9	U

- PoE Mode

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
NETWORK CAMERA (E.U.T)	Alarm IN	Alarm	Alarm IN	3.0	U
	RJ-45	PoE	RJ-45	4.0	U
	Micro SD card SLOT	Micro SD card	Micro SD card SLOT	-	-
	Audio In	MIC	Audio In	1.9	U
PoE	RJ-45	Notebook	RJ-45	4.0	U

\* Unshielded=U, Shielded=S

## 1.7 EUT Operating Mode(s)

Equipment under test was operated during the measurement under the following conditions:

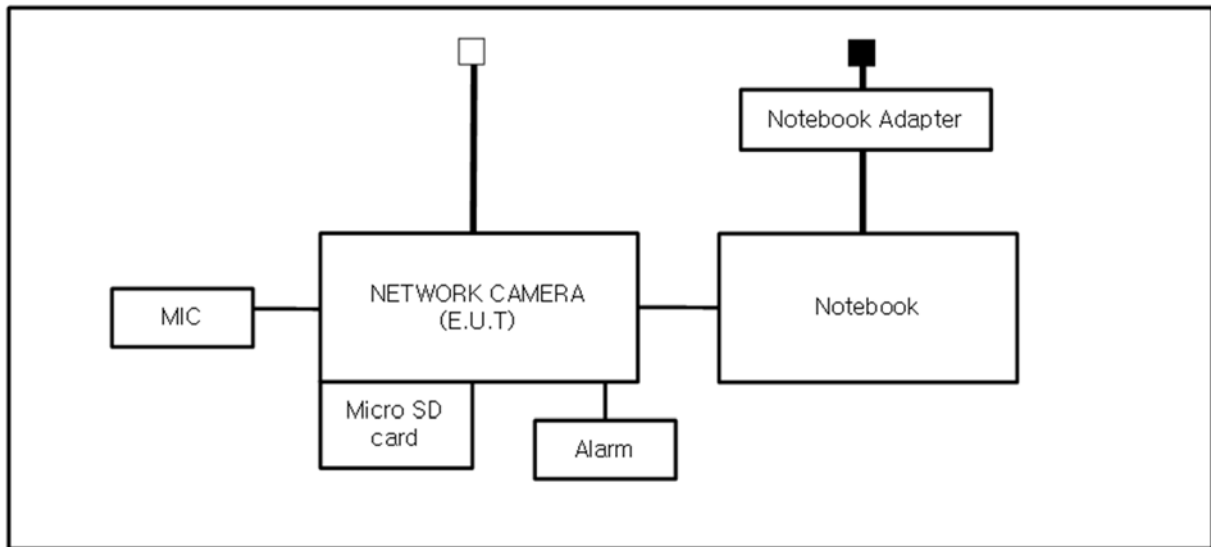
Test mode	Normal operating
OP	MONITORING Network ping test

- Input power condition during the measurements was 12 V (dc) , PoE

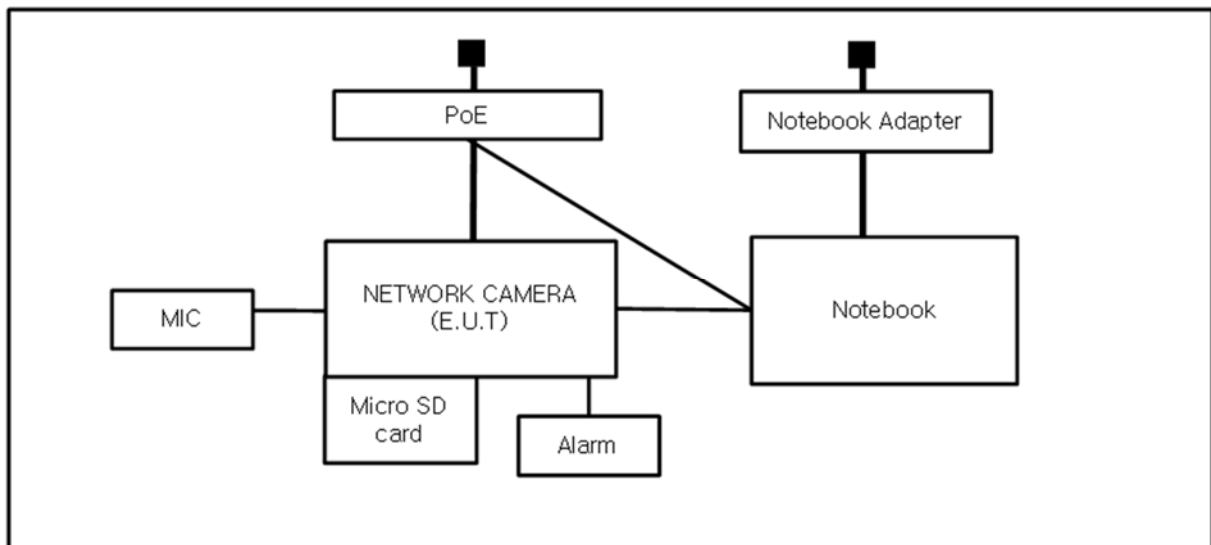
## 1.8 Configuration

■ AC Main  
 □ DC Main

- DC 12 V Mode



- PoE Mode











## 1.9 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less.

## 1.10 Test Facility

The measurement facility is located at 473-21 Gayeo-ro, Yeoju-si, Gyeonggi-do, 12658, Korea. The sites are constructed in conformance with the requirements of ANSI C63.4:2014 and CISPR 16-1-4:2019

## 1.11 Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Logo
KOREA	<b>RRA</b>	EMI (3 m & 10 m Semi-Anechoic Chamber , 10 m Open Area and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	 KR0100
International	<b>KOLAS</b>	EMI (3 m & 10 m Semi-Anechoic Chamber , and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	 KT489
USA	<b>FCC</b>	3 m & 10 m Semi-Anechoic Chamber, 10 m Open Area and Conducted test site to perform FCC Part 15/18 measurements.	 KR0100
Canada	<b>ISED</b>	3 m & 10 m Semi-Anechoic Chamber and Conducted test site	 23298-1
JAPAN	<b>VCCI</b>	Mains Ports Conducted Interference Measurement, Telecommunication Ports Conducted Disturbance Measurement and Radiation 10 meter site, Facility for measuring radiated disturbance above 1 GHz	 R-20056, C-20036, T-20040, G-20057
Europe	<b>TÜV SÜD</b>	EMI (3 m & 10 m Semi-Anechoic Chamber , 10 m Open Area and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	 CARAT 001633 0004

## 2.0 Test Regulations

The emissions tests were performed according to following regulations:

☐ **EMC – Directive 2014/30/EU**

☐ EN 61000-6-3:2011

☐ EN 61000-6-1:2007

☐ EN 61000-6-4:2007 +A1:2011

☐ EN 61000-6-2:2005

☐ EN 55011:2007 +A1:2010

☐ Group 1  
☐ Class A

☐ Group 2  
☐ Class B

☐ EN 55014-1:2006 +A2:2011

☐ EN 55014-2:1997 +A2:2008

☐ EN 55015:2013

☐ EN 55022:2010

☐ Class A

☐ Class B

☐ EN 55024:2010

☐ EN 50130-4:2011 +A1:2014

☐ EN 61000-3-2:2014

☐ EN 61000-3-3:2013

☐ EN 61326-1:2013

☐ VCCI V-3 / 2013.04

☐ Class A

☐ Class B

☐ AS/NZS CISPR22:2009 +A1:2010

☐ Class A

☐ Class B

☒ 47 CFR Part 15, Subpart B / ANSI C63.4-2009 ☒ Class A

☐ Class B

☐ IC Regulation ICES-003 : 2012  
 / ANSI C63.4-2014

☐ Class A

☐ Class B

☐ CISPR 22:2009 +A1:2010

☐ Class A

☐ Class B



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☐ **R&TTE- Directive 1999/5/EC**

☐ EN 301 489-1 V1.9.2

- ☐ Equipment for fixed use
- ☐ Equipment for vehicular use
- ☐ Equipment for portable use

☐ EN 301 489-3 V1.6.1

☐ EN 301 489-17 V2.2.1

☐ EN 60945:2002

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## 2.1 Conducted Emissions at Mains Power Ports

### Test Date

N/A

### Test Location

Electro wave Shieldroom

### Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input type="checkbox"/>	EMI Test Receiver	ESR3	R&S	101783	05, 03, 2017
<input type="checkbox"/>	LISN	ENV216	R&S	101137	02, 04, 2017
<input type="checkbox"/>	LISN	ENV216	R&S	101786	05, 02, 2017
<input type="checkbox"/>	Electro wave Shieldroom	-	SEMITEC	-	-

### Test Conditions

Temperature: °C  
Relative Humidity: %

### Frequency Range of Measurement

150 kHz to 30 MHz

### Instrument Settings

IF Band Width: 9 kHz

### Test Results

The requirements are:

- ☐ PASS  
☐ NOT PASS  
☒ NOT APPLICABLE

### Remarks

Input power Condition during the measurements was 12 V (dc), PoE



## 2.2 Radiated Electric Field Emissions(Below 1 GHz)

### Test Date

May. 09, 2016

### Test Location

☐ Open Area Test Site #1      ☒ Open Area Test Site #2

### Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMI Test Receiver	ESR3	R&S	101781	05, 03, 2017
<input checked="" type="checkbox"/>	Trilog-Broadband Antenna	VULB 9163	SCHWARZBECK	9168-713	05, 15, 2017
<input checked="" type="checkbox"/>	Open Area Test Site	-	KES	-	-
<input checked="" type="checkbox"/>	Antenna Mast	-	DAEIL EMC	-	-
<input checked="" type="checkbox"/>	Turn Table	-	DAEIL EMC	-	-

### Test Conditions

Temperature: 27,4 °C

Relative Humidity: 28,0 %

### Frequency Range of Measurement

30 MHz to 1 GHz

### Instrument Settings

IF Band Width: 120 kHz

### Test Results

The requirements are:

- ☒ PASS  
☐ NOT PASS  
☐ NOT APPLICABLE

### Remarks

See Appendix A for test data.



## 2.3 Radiated Electric Field Emissions(Above 1 GHz)

### Test Date

May. 09, 2016

### Test Location

Semi Anchoic Chamber #2

### Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due
<input checked="" type="checkbox"/>	EMI Test Receiver	ESU26	R&S	100551	04, 18, 2017
<input checked="" type="checkbox"/>	Broadband Coaxial Preamplifier	BBV 9718	Schwarzbeck Mess - Elektronik	9718-246	10, 23, 2016
<input checked="" type="checkbox"/>	DOUBLE RIDGED HORN ANTENNA	SAS-571	A.H.SYSTEM,INC	781	05, 07, 2017
<input checked="" type="checkbox"/>	Semi Anchoic Chamber #2	-	SEMITEC	-	-
<input checked="" type="checkbox"/>	Antenna Mast	-	AUDIX	-	-
<input checked="" type="checkbox"/>	Turn Table	-	AUDIX	-	-

### Test Conditions

Temperature: 25,7 °C  
Relative Humidity: 39,7 %

### Frequency Range of Measurement

1 GHz to 5 GHz

### Instrument Settings

IF Band Width: 1 MHz

### Test Results

The requirements are:

- ☒ PASS  
☐ NOT PASS  
☐ NOT APPLICABLE

### Remarks

See Appendix A for test data.





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## **APPENDIX A – TEST DATA**

### **Conducted Emissions at Mains Power Ports**

**[HOT]**

N/A

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**[NEUTRAL]**

N/A

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## Radiated Electric Field Emissions(Below 1 GHz)

- DC 12V Mode

Frequency	Amplitude	ANT	ANT. Height	Correction Factor		Corrected Amplitude	Applicable Limit	Margin
[MHz]	[dB $\mu$ V]	Polar. (H/V)	[m]	ANT. [dB/m]	Cable [dB]	[dB $\mu$ V/m]	[dB $\mu$ V/m]	[dB]
230.43	6.91	H	3.90	11.98	3.59	22.48	46.40	23.92
250.34	6.63	V	1.10	12.42	3.80	22.85	46.40	23.55
264.11	7.12	H	4.00	12.68	3.92	23.72	46.40	22.68
309.64	6.74	V	1.00	13.60	4.30	24.64	46.40	21.76
408.22	8.34	H	3.85	15.82	5.10	29.26	46.40	17.14
448.72	6.88	V	1.00	16.38	5.39	28.65	46.40	17.75

\* H : Horizontal, V : Vertical

- PoE Mode

Frequency	Amplitude	ANT	ANT. Height	Correction Factor		Corrected Amplitude	Applicable Limit	Margin
[MHz]	[dB $\mu$ V]	Polar. (H/V)	[m]	ANT. [dB/m]	Cable [dB]	[dB $\mu$ V/m]	[dB $\mu$ V/m]	[dB]
168.58	6.68	V	1.00	8.92	2.93	18.53	43.50	24.97
270.59	7.26	H	3.90	12.81	3.97	24.04	46.40	22.36
408.56	6.62	H	3.85	15.82	5.10	27.54	46.40	18.86
448.32	6.20	V	1.12	16.38	5.38	27.96	46.40	18.44
456.87	7.34	H	4.00	16.50	5.44	29.28	46.40	17.12
594.89	7.32	V	1.00	19.19	6.29	32.80	46.40	13.60

\* H : Horizontal, V : Vertical



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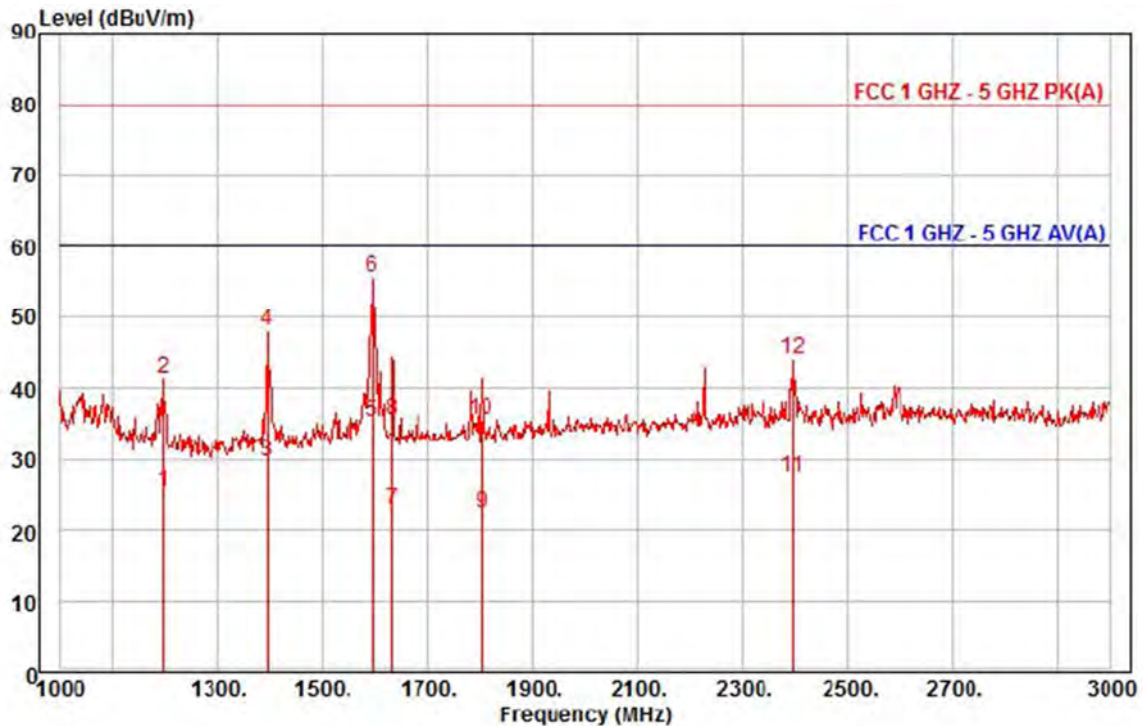
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## Radiated Electric Field Emissions(Above 1 GHz)

- DC 12V Mode



Site : chamber  
Condition: FCC 1 GHz - 5 GHz PK(A) 3m HORN781(2015.05.07) horizontal  
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto  
Project :  
Model : QNO-7030RN  
Mode : DC 12 V  
Memo :

	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	1198.00	33.73	24.70	7.08	40.02	138	60.00	-34.51	horizontal	Average
2	1198.00	49.63	24.70	7.08	40.02	138	80.00	-38.61	horizontal	Peak
3	1394.00	36.41	25.47	7.65	39.93	121	60.00	-30.40	horizontal	Average
4	1394.00	54.87	25.47	7.65	39.93	121	80.00	-31.94	horizontal	Peak
5 av	1596.00	40.73	26.28	8.24	39.83	92	60.00	-24.58	horizontal	Average
6 pp	1596.00	60.87	26.28	8.24	39.83	92	80.00	-24.44	horizontal	Peak
7	1632.00	28.10	26.42	8.34	39.81	161	60.00	-36.95	horizontal	Average
8	1632.00	40.61	26.42	8.34	39.81	161	80.00	-44.44	horizontal	Peak
9	1802.00	26.38	27.09	8.81	39.73	23	60.00	-37.45	horizontal	Average
10	1802.00	39.35	27.09	8.81	39.73	23	80.00	-44.48	horizontal	Peak
11	2396.00	28.54	28.85	9.96	39.86	124	60.00	-32.51	horizontal	Average
12	2396.00	45.23	28.85	9.96	39.86	124	80.00	-35.82	horizontal	Peak

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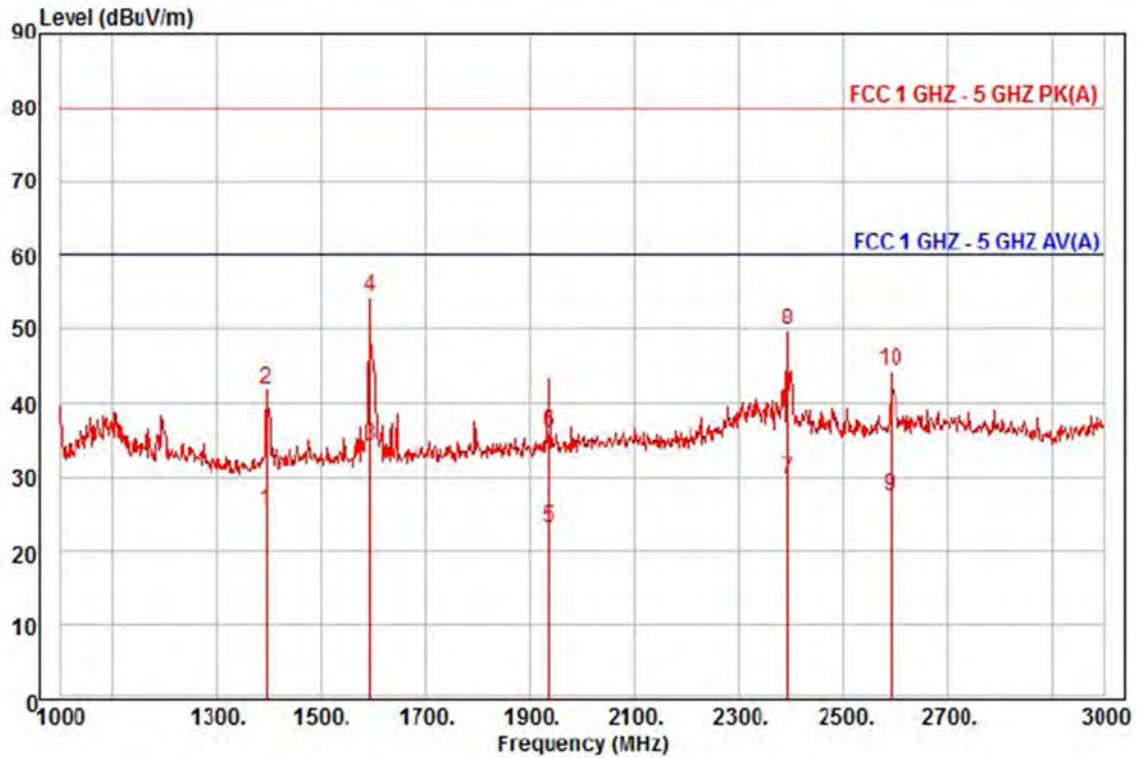
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Test report No.:

KES-E1-16T0215-R1

Page (19) of (37)



Site : chamber  
Condition: FCC 1 GHZ - 5 GHZ PK(A) 3m HORN781(2015.05.07) vertical  
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto  
Project :  
Model : QNO-7030RN  
Mode : DC 12 V  
Memo :

	Freq	Read Level	Ant Factor	Cable Loss	Preamp Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	1394.00	32.25	25.47	7.65	39.93	221	60.00	-34.56	vertical	Average
2	1394.00	48.84	25.47	7.65	39.93	221	80.00	-37.97	vertical	Peak
3 av	1594.00	39.78	26.27	8.23	39.83	45	60.00	-25.55	vertical	Average
4 pp	1594.00	59.89	26.27	8.23	39.83	45	80.00	-25.44	vertical	Peak
5	1934.00	26.11	27.62	9.17	39.66	175	60.00	-36.76	vertical	Average
6	1934.00	38.90	27.62	9.17	39.66	175	80.00	-43.97	vertical	Peak
7	2394.00	30.85	28.85	9.95	39.86	224	60.00	-30.21	vertical	Average
8	2394.00	50.93	28.85	9.95	39.86	224	80.00	-30.13	vertical	Peak
9	2590.00	27.74	29.33	10.25	39.97	36	60.00	-32.65	vertical	Average
10	2590.00	44.79	29.33	10.25	39.97	36	80.00	-35.60	vertical	Peak

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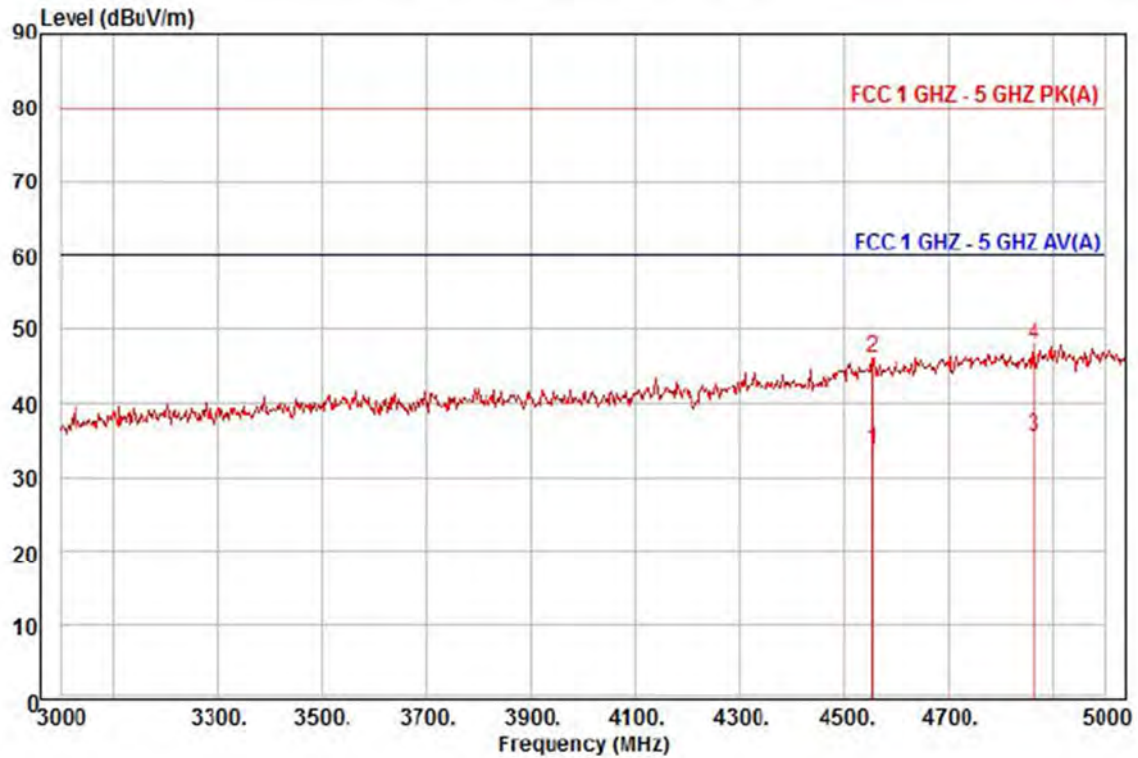




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Test report No.:  
KES-E1-16T0215-R1  
Page (20) of (37)



Site : chamber  
Condition: FCC 1 GHZ - 5 GHZ PK(A) 3m HORN781(2015.05.07) horizontal  
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto  
Project :  
Model : QNO-7030RN  
Mode : DC 12 V  
Memo :

	Freq	Read Level	Ant Factor	Cable Loss	Preamplifier Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	4554.00	24.62	35.17	14.53	40.41	354	60.00	-26.09	horizontal	Average
2	4554.00	36.88	35.17	14.53	40.41	354	80.00	-33.83	horizontal	Peak
3	4863.00	24.07	36.94	15.08	40.41	232	60.00	-24.32	horizontal	Average
4	4863.00	36.33	36.94	15.08	40.41	232	80.00	-32.06	horizontal	Peak
5 pp	5400.00	24.13	36.91	15.80	40.35	230	60.00	-23.51	horizontal	Average
6 pk	5400.00	36.83	36.91	15.80	40.35	230	80.00	-30.81	horizontal	Peak

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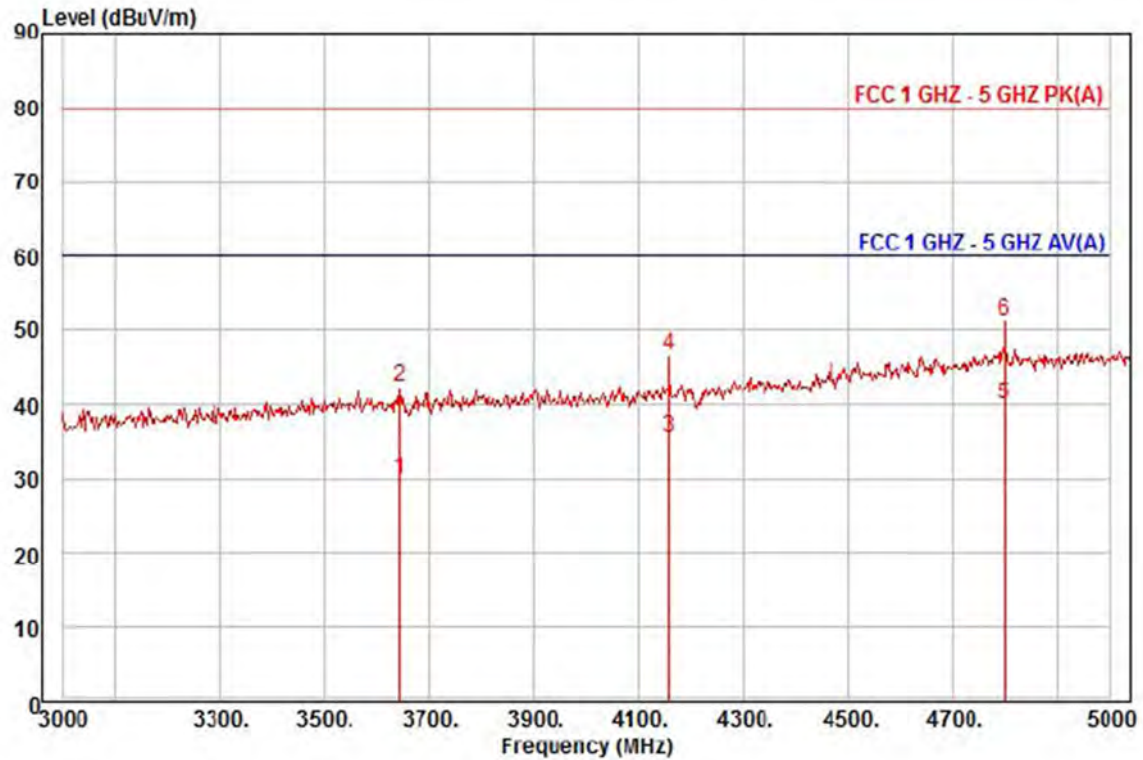
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Test report No.:

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Site : chamber  
Condition: FCC 1 GHZ - 5 GHZ PK(A) 3m HORN781(2015.05.07) vertical  
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto  
Project :  
Model : QNO-7030RN  
Mode : DC 12 V  
Memo :

	Freq	Read Level	Ant Factor	Cable Loss	Preamplifier	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	3642.00	25.99	31.41	12.79	40.34	245	60.00	-30.15	vertical	Average
2	3642.00	38.59	31.41	12.79	40.34	245	80.00	-37.55	vertical	Peak
3	4158.00	29.37	32.91	13.80	40.41	222	60.00	-24.33	vertical	Average
4	4158.00	40.33	32.91	13.80	40.41	222	80.00	-33.37	vertical	Peak
5 pp	4800.00	28.92	36.58	14.97	40.41	216	60.00	-19.94	vertical	Average
6 pk	4800.00	40.08	36.58	14.97	40.41	216	80.00	-28.78	vertical	Peak

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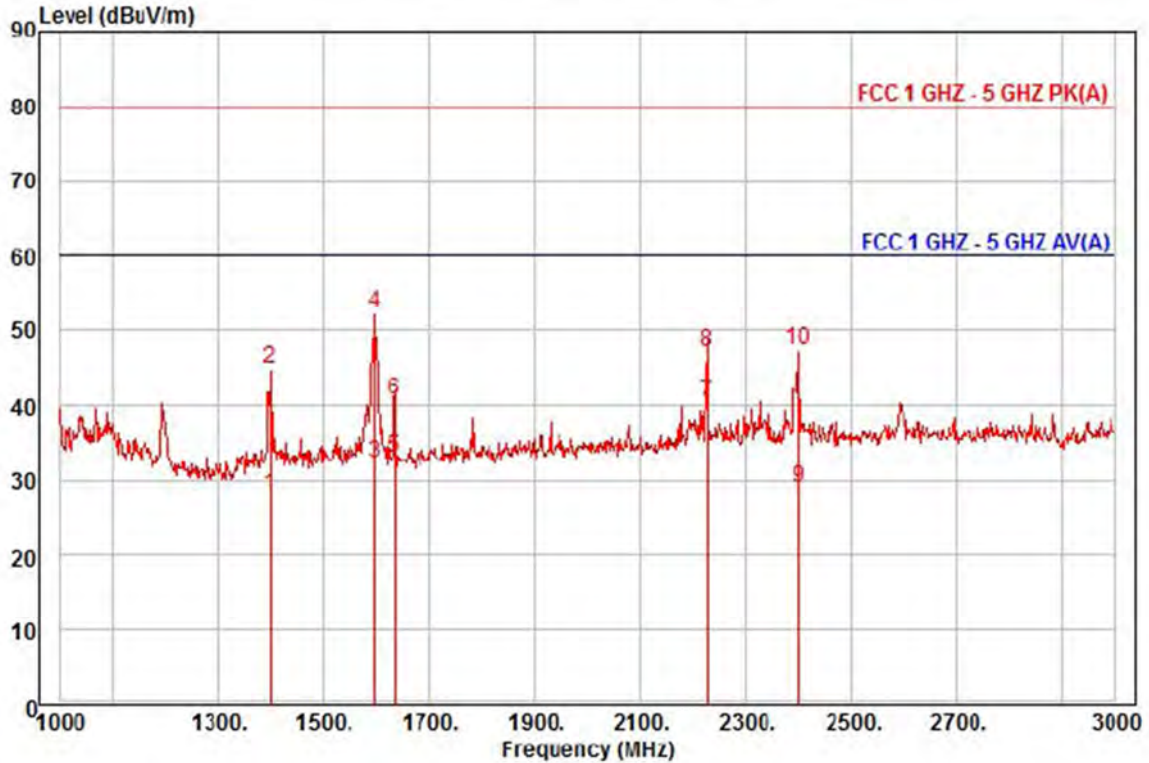


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Test report No.:  
KES-E1-16T0215-R1  
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- PoE Mode



Site : chamber  
Condition: FCC 1 GHZ - 5 GHZ PK(A) 3m HORN781(2015.05.07) horizontal  
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto  
Project :  
Model : QNO-7030RN  
Mode : PoE  
Memo :

	Freq	Read Level	Ant Factor	Cable Loss	Preamplifier Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	1398.00	34.63	25.49	7.66	39.92	111	60.00	-32.14	horizontal	Average
2	1398.00	51.72	25.49	7.66	39.92	111	80.00	-35.05	horizontal	Peak
3	1598.00	37.70	26.28	8.24	39.83	278	60.00	-27.61	horizontal	Average
4 pk	1598.00	57.67	26.28	8.24	39.83	278	80.00	-27.64	horizontal	Peak
5	1634.00	38.18	26.43	8.34	39.81	169	60.00	-26.86	horizontal	Average
6	1634.00	45.66	26.43	8.34	39.81	169	80.00	-39.38	horizontal	Peak
7 pp	2228.00	42.17	28.44	9.70	39.76	121	60.00	-19.45	horizontal	Average
8	2228.00	48.75	28.44	9.70	39.76	121	80.00	-32.87	horizontal	Peak
9	2400.00	30.08	28.86	9.96	39.86	95	60.00	-30.96	horizontal	Average
10	2400.00	48.49	28.86	9.96	39.86	95	80.00	-32.55	horizontal	Peak

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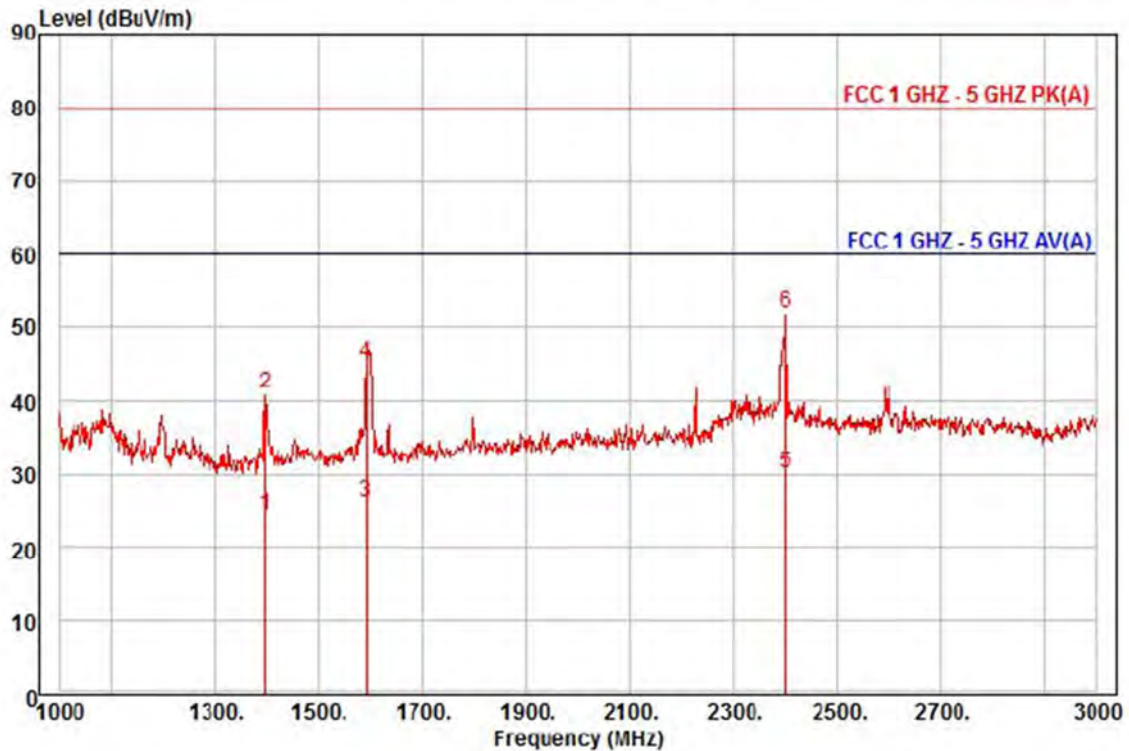
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Test report No.:

KES-E1-16T0215-R1

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Site : chamber  
Condition: FCC 1 GHZ - 5 GHZ PK(A) 3m HORN781(2015.05.07) vertical  
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto  
Project :  
Model : QNO-7030RN  
Mode : PoE  
Memo :

	Freq	Read Level	Ant Factor	Cable Loss	Preamplifier Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	1396.00	31.43	25.48	7.66	39.93	232	60.00	-35.36	vertical	Average
2	1396.00	47.79	25.48	7.66	39.93	232	80.00	-39.00	vertical	Peak
3	1592.00	31.63	26.26	8.23	39.83	53	60.00	-33.71	vertical	Average
4	1592.00	50.37	26.26	8.23	39.83	53	80.00	-34.97	vertical	Peak
5 av	2400.00	31.21	28.86	9.96	39.86	220	60.00	-29.83	vertical	Average
6 pp	2400.00	53.03	28.86	9.96	39.86	220	80.00	-28.01	vertical	Peak

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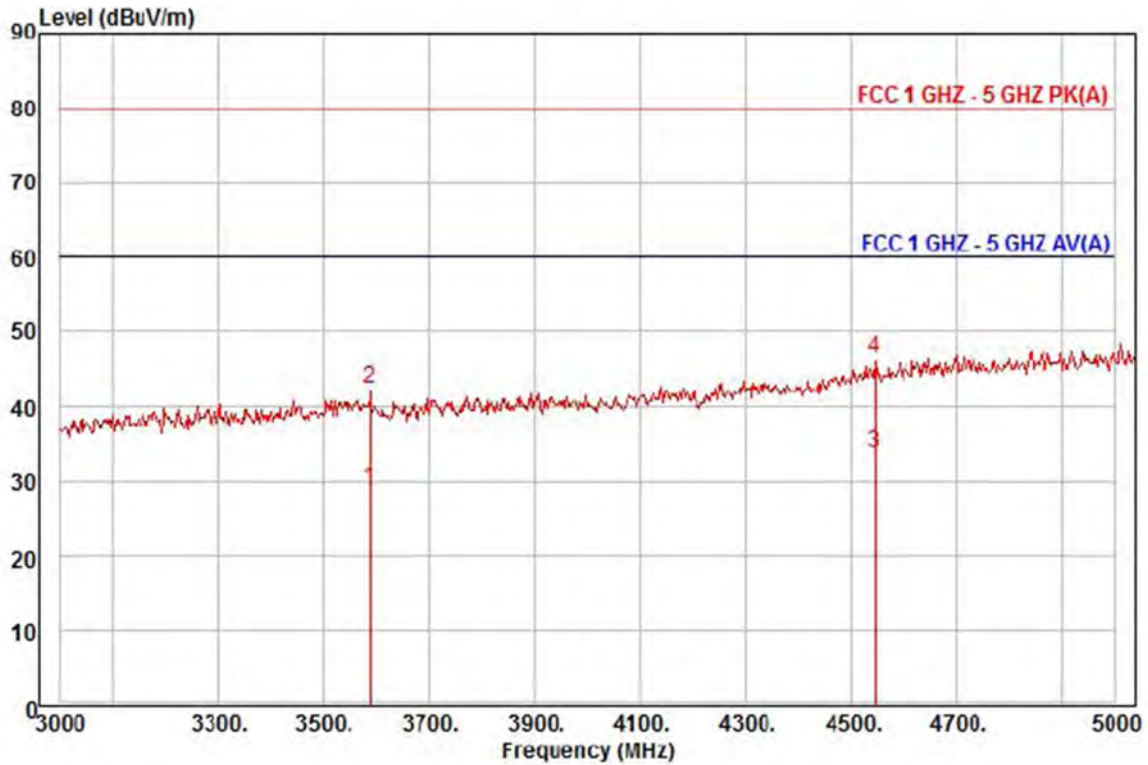
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Test report No.:

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Site : chamber  
Condition: FCC 1 GHZ - 5 GHZ PK(A) 3m HORN781(2015.05.07) horizontal  
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto  
Project :  
Model : QNO-7030RN  
Mode : PoE  
Memo :

		Read	Ant	Cable	Preamp	TPos	Limit	Over		
	Freq	Level	Factor	Loss	Factor		Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	3588.00	25.23	31.32	12.69	40.33	243	60.00	-31.09	horizontal	Average
2	3588.00	38.65	31.32	12.69	40.33	243	80.00	-37.67	horizontal	Peak
3	4545.00	24.72	35.12	14.51	40.41	79	60.00	-26.06	horizontal	Average
4	4545.00	37.10	35.12	14.51	40.41	79	80.00	-33.68	horizontal	Peak
5 pp	5013.00	23.50	37.69	15.35	40.41	116	60.00	-23.87	horizontal	Average
6 pk	5013.00	36.47	37.69	15.35	40.41	116	80.00	-30.90	horizontal	Peak
7	5577.00	23.16	36.55	16.06	40.33	56	60.00	-24.56	horizontal	Average
8	5577.00	35.75	36.55	16.06	40.33	56	80.00	-31.97	horizontal	Peak

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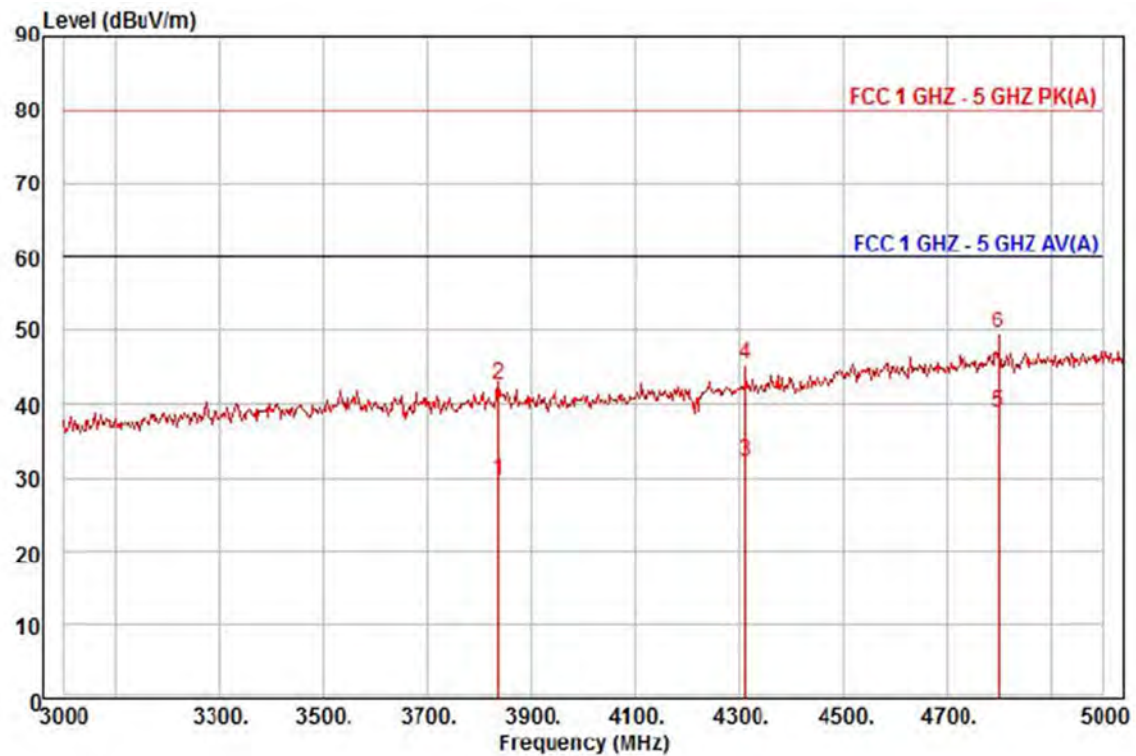
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Test report No.:

KES-E1-16T0215-R1

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Site : chamber  
Condition: FCC 1 GHZ - 5 GHZ PK(A) 3m HORN781(2015.05.07) vertical  
: RBW:1000.000kHz VBW:1000.000kHz SWT:Auto  
Project :  
Model : QNO-7030RN  
Mode : PoE  
Memo :

	Freq	Read Level	Ant Factor	Cable Loss	Preamplifier Factor	TPos	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	deg	dBuV/m	dB		
1	3837.00	25.22	31.74	13.18	40.38	230	60.00	-30.24	vertical	Average
2	3837.00	38.07	31.74	13.18	40.38	230	80.00	-37.39	vertical	Peak
3	4311.00	24.81	33.79	14.08	40.41	311	60.00	-27.73	vertical	Average
4	4311.00	37.98	33.79	14.08	40.41	311	80.00	-34.56	vertical	Peak
5 pp	4800.00	27.50	36.58	14.97	40.41	198	60.00	-21.36	vertical	Average
6 pk	4800.00	38.48	36.58	14.97	40.41	198	80.00	-30.38	vertical	Peak

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## Test Setup Photos and Configuration

### Conducted Voltage Emissions

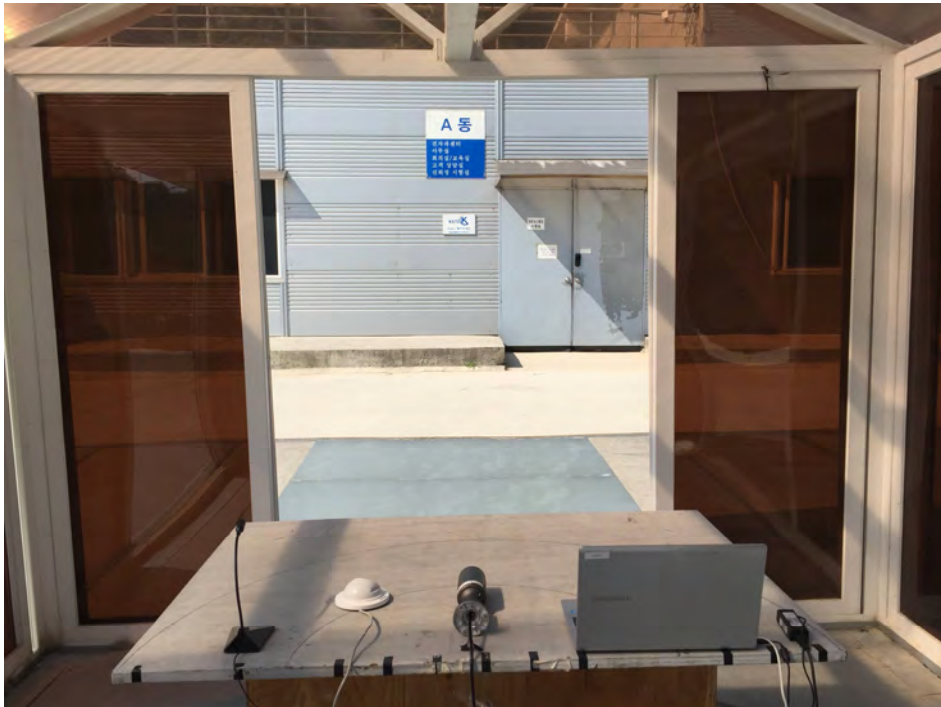
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N/A



## Radiated Electric Field Emissions(Below 1 GHz)

- DC 12V Mode



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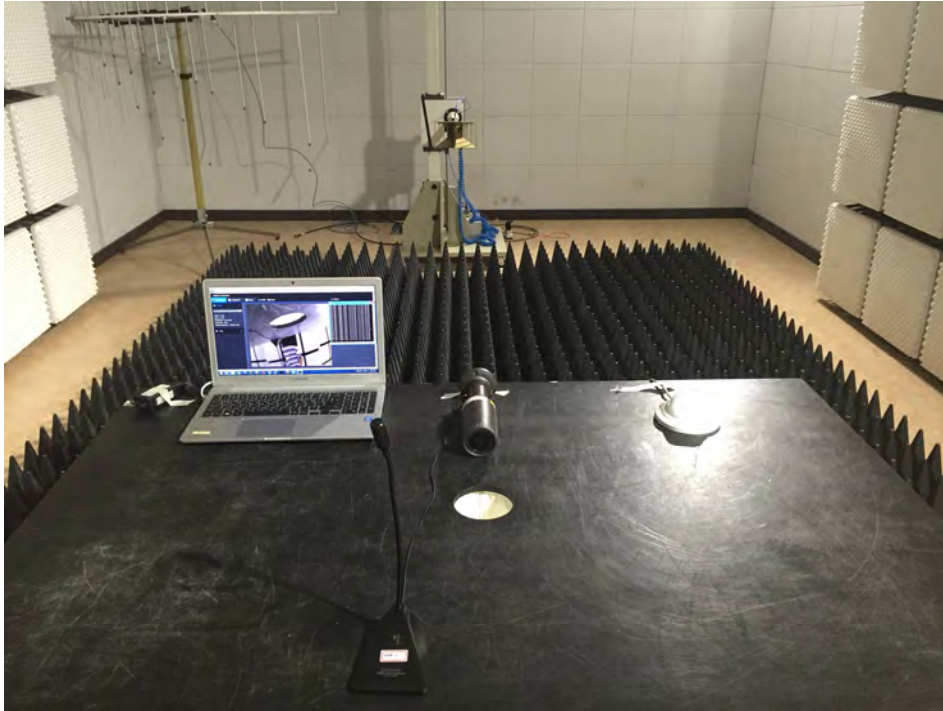
- PoE Mode





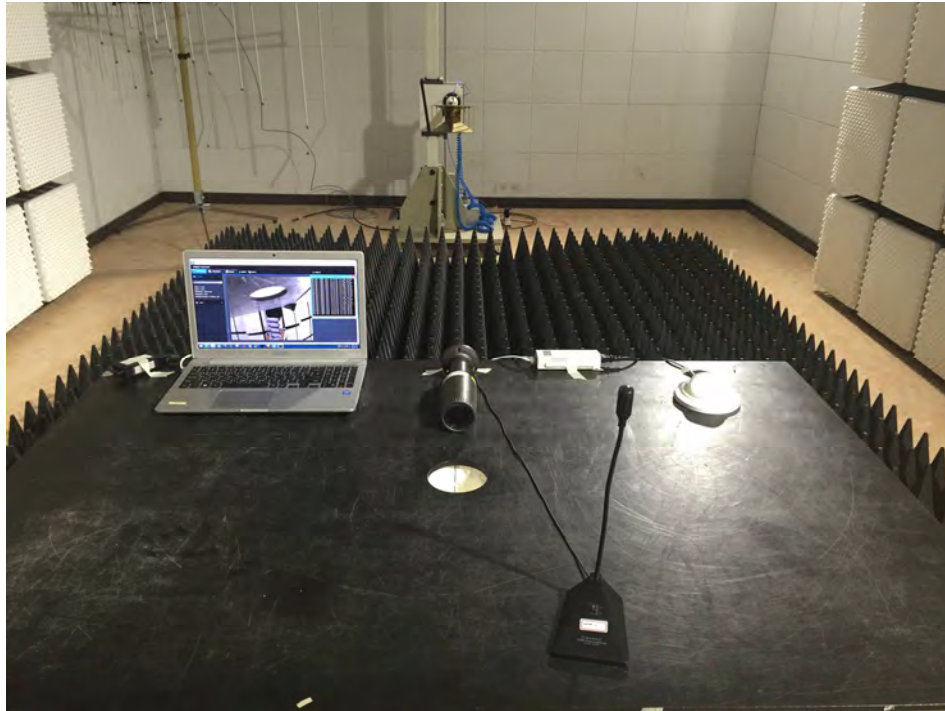
## **Radiated Electric Field Emissions(Above 1 GHz)**

- DC 12V Mode



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- PoE Mode



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## EUT External Photographs

(Top)



(Bottom)



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## EUT Internal Photographs

(Internal View)



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## Main Board EUT Internal View – Main Board

(Top)



(Bottom)



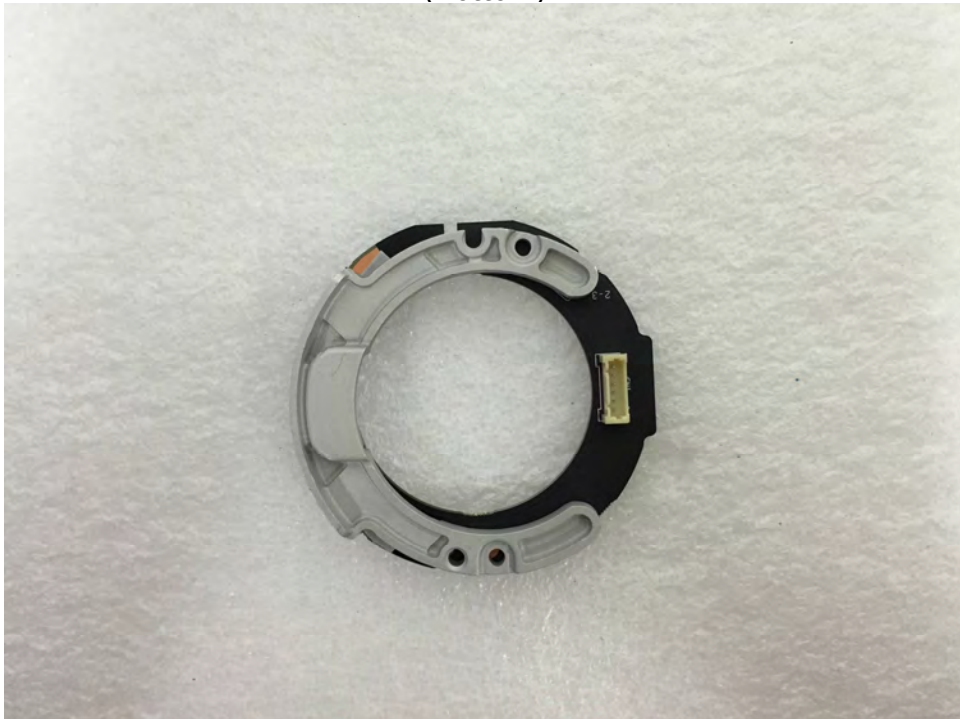
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## Main Board EUT Internal View – Sub Board1

(Top)



(Bottom)

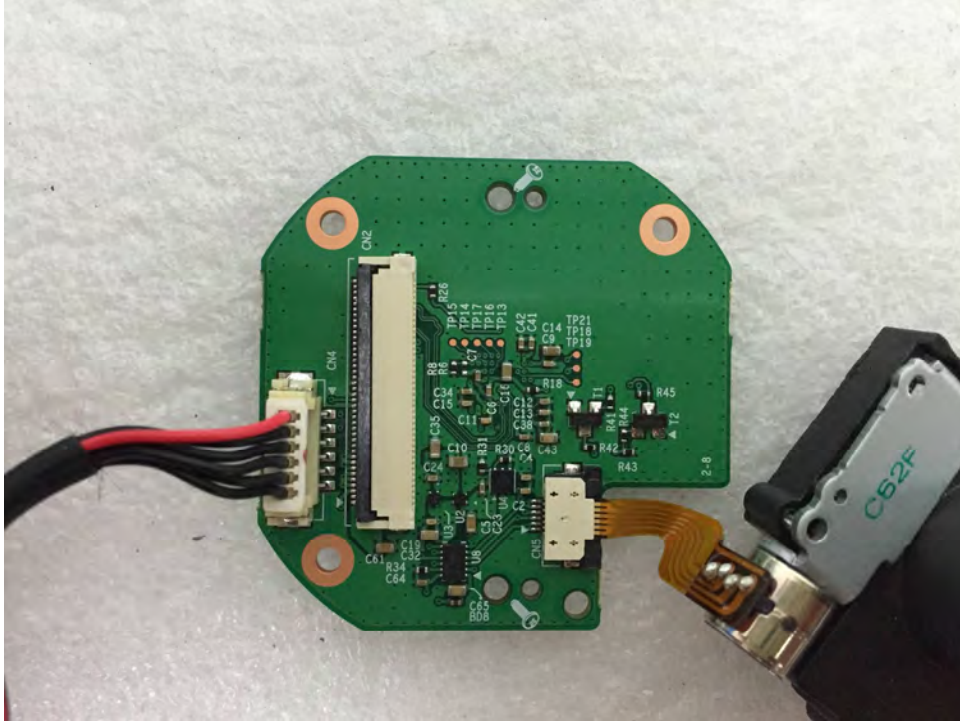


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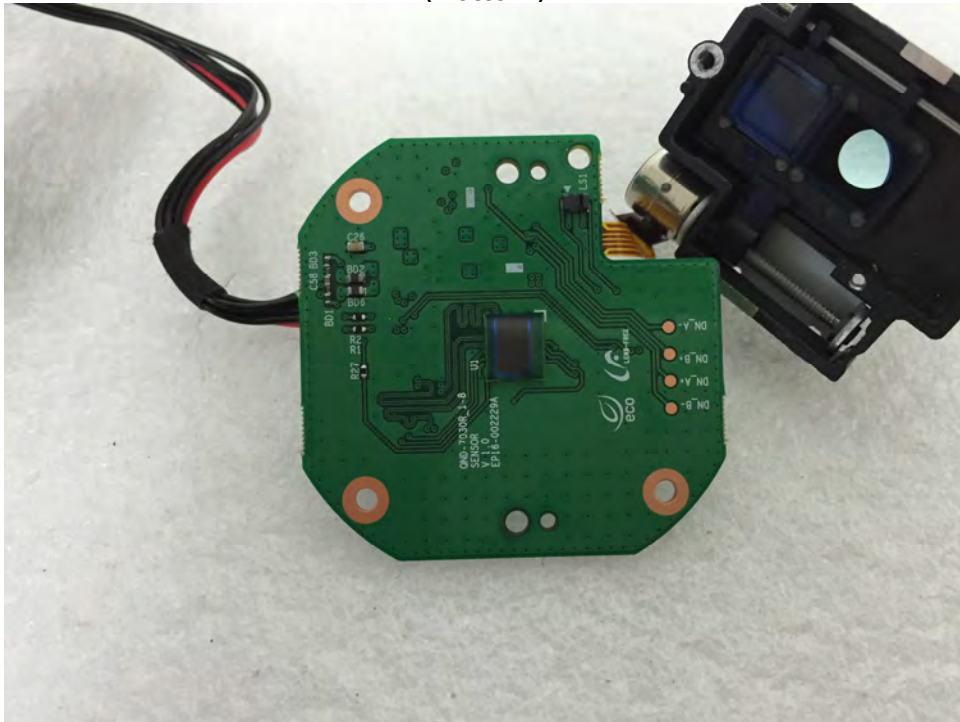


## Main Board EUT Internal View – Sub Board 2

(Top)



(Bottom)



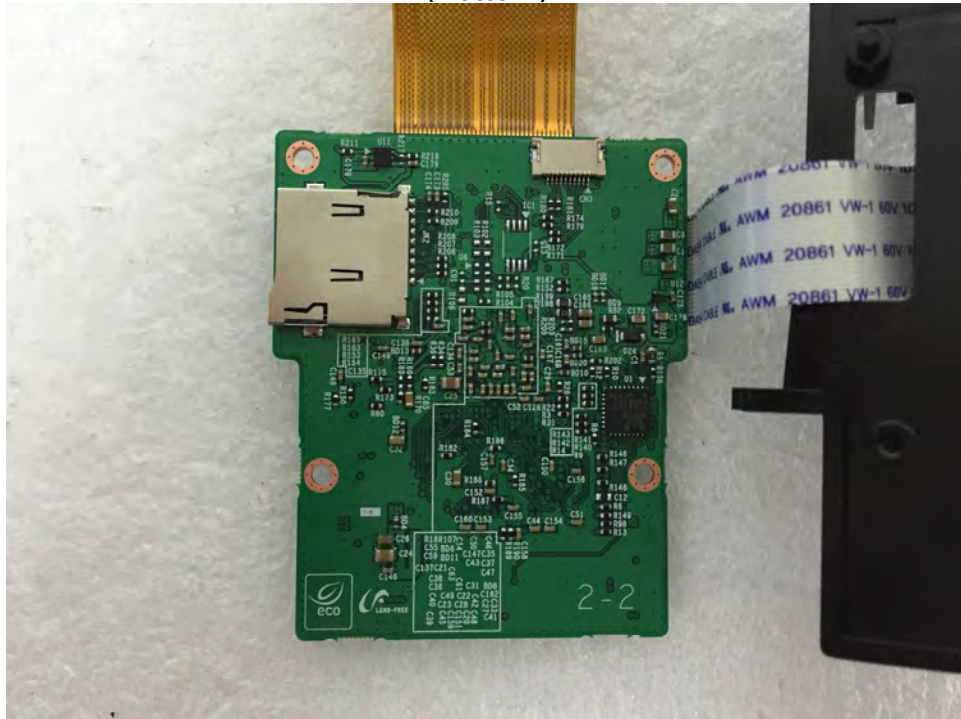
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## Main Board EUT Internal View – Sub Board 3

(Top)



(Bottom)



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## Label Photographs



This device complies with part 15 of the FCC Rules. Operation in 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.