# FCC TEST REPORT

For SHENZHEN BAICHUAN SECURITY TECHNOLOGY CO., LTD

WIFI Network Video Recorder Model No.: SRNVW-470LCD-US

Test Report Number: ESTSZ140101201F



Shenzhen Exact Standard Testing Technology Co., Ltd. No. 403, Building 7, Xinyuan Industrial Park, Xinguang Road, Xili, Nanshan District, Shenzhen 518055, China Tel:+86-755-26648640 Fax:+86-755-26648637

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# 1 - GENERAL INFORMATION

# 1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: SHENZHEN BAICHUAN SECURITY TECHNOLOGY CO., LTD

Address of applicant: 2F, Building B, Jingmeiwei Industrial Park, Hi-tech Industrial Area,

Guanlan Town, Baoan District, Shenzhen City, China

Manufacturer: SHENZHEN BAICHUAN SECURITY TECHNOLOGY CO., LTD

Address of manufacturer: 2F, Building B, Jingmeiwei Industrial Park, Hi-tech Industrial Area,

Guanlan Town, Baoan District, Shenzhen City, China

General Description of E.U.T

EUT Description: WIFI Network Video Recorder

Trade Name: Swann

Model No.: SRNVW-470LCD-US Rating: AC 100-240V, 50/60Hz

Test Power Supply: AC 120V, 60Hz

Frequency: 2412~2462 MHz (11 channels, 5MHz step size)

#### 1.2 Test Standards

The following Declaration of Conformity report of EUT is prepared in accordance with

FCC Rules and Regulations Part 15 Subpart C 15.207, 15.209 and 15.247: 2009
The objective of the manufacturer is to demonstrate compliance with the described above standards. Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior written consent of Shenzhen Exact Standard Testing Technology Co., Ltd.

Date of Test:	Dec. 25, 2013~Jan. 17, 2014
Prepared by:	Tamel pe
	(Testing Engineer: David He)
Reviewer:	Ari hi
	(Project Manager: Ronnie Liu)
Approved & Authorized Signer:	A Tex den
	(Manager: Alex Chen)

# 1.3 Test Methodology

The tests were performed according to following standards:

FCC Part 15.247: Frequency Hopping, Direct Spread Spectrum and Hybrid Systems that are in operation within the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz.

**ANSI C63.4-2009** 

ANSI C63.10-2009: American National Standard for Testing Unlicensed Wireless Devices.

KDB Publication No. 558074 Guidance on Measurements for Digital Transmission Systems

The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the Operating Instructions.

The maximum emission levels emanating from the device are compared to the FCC Part 15 Subpart C limits for radiation emissions and the measurement results contained in this test report show that EUT is to be technically compliant with FCC requirements.

Global United Technology Service Co., Ltd at 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, China

# 1.4 Test Facility

All measurement required was performed at laboratory of Global United Technology Service Co., Ltd at 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, China

The test facility is recognized, certified, or accredited by the following organizations:

FCC – Registration No.: 600491

Global United Technology Service Co., Ltd 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. Registration 600491.

The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2009.

# 1.5 Test Item

Test Item	Mode	Data Rate	Channel
AC Power Conducted Emission	Normal Link	11 Mbps	1
Maximum Peak Conducted Output Power	11b/DSSS	11 Mbps	1/6/11
Power Spectral Density	11g/OFDM	54 Mbps	1/6/11
6dB Bandwidth	11n(20MHz)/OFDM	65Mbps	1/6/11
Spurious RF conducted emission	11n(40MHz)/OFDM	135Mbps	3/6/9
	11b/DSSS	11 Mbps	1/6/11
Radiated Emission 30MHz~1GHz	11g/OFDM	54 Mbps	1/6/11
Radiated Emission 1GHz~10th Harmonic	11n(20MHz)/OFDM	65Mbps	1/6/11
	11n(40MHz)/OFDM	135Mbps	3/6/9
	11b/DSSS	11 Mbps	1/6/11
Band Edge Compliance of RF Emission	11g/OFDM	54 Mbps	1/6/11
Band Edge Comphance of KI Emission	11n(20MHz)/OFDM	65Mbps	1/6/11
	11n(40MHz)/OFDM	135Mbps	3/6/9

1.6 Test Equipment List and Details

	nent List and Det				
Equipment	Manufacturer	Model#	Serial #	Data of Cal.	Due Data
3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS201	Mar. 30 2013	Mar. 30 2014
Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS202	N/A	N/A
EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	Mar. 30 2013	Mar. 30 2014
EMI Test Software	AUDIX	E3	N/A	N/A	N/A
Coaxial Cable	GTS	N/A	GTS400	Apr. 01 2013	Apr. 01 2014
Coaxial Cable	GTS	N/A	GTS401	Apr. 01 2013	Apr. 01 2014
Coaxial Cable	GTS	N/A	GTS402	Apr. 01 2013	Apr. 01 2014
Coaxial Cable	GTS	N/A	GTS407	Apr. 01 2013	Apr. 01 2014
Coaxial Cable	GTS	N/A	GTS408	Apr. 01 2013	Apr. 01 2014
BiConiLog Antenna (26- 3000MHz)	SCHWARZBECK MESS- ELEKTRONIK	VULB9163	GTS204	Feb. 26 2013	Feb. 26 2014
Pre- amplifier(0.1- 3000MHz)	HP	8347A	GTS210	Aug. 03 2013	Aug. 03 2014
Double-ridged horn (1-18GHz)	SCHWARZBECK MESS- ELEKTRONIK	9120D-829	GTS205	Feb. 26 2013	Feb. 26 2014
Pre-amplifier(1- 18GHz)	Rohde & Schwarz	8349B	GTS224	Mar. 30 2013	Mar. 30 2014
Humidity/ Temperature Indicator	Shanghai	ZJ1-2B	GTS250	Oct. 28 2013	Oct. 28 2014
Barometer	ChangChun	DYM3	GTS251	Feb. 26 2013	Feb. 26 2014
Shielding Room	ZhongYu Electron	7.0(L)*3.0(W)*3.0(H)	GTS206	Apr. 10 2013	Apr. 10 2014
EMI Test Receiver	Rohde & Schwarz	ESCS30	GTS208	Sept. 14 2013	Sept. 14 2014
10dB Pulse Limiter	Rohde & Schwarz	N/A	GTS209	Sept. 14 2013	Sept. 14 2014
LISN	SCHWARZBECK MESS- ELEKTRONIK	NSLK 8127	GTS207	Apr. 14 2013	Apr. 14 2014
Coaxial Cable	GTS	N/A	GTS406	Apr. 01 2013	Apr. 01 2014
Loop Antenna	ETS-Lindgren	6502	00082431	Apr. 14 2013	Apr. 14 2014
Double-ridged horn (15- 26.5GHz)	SCHWARZBECK MESS- ELEKTRONIK	BBHA-9170	GTS211	Apr. 01 2013	Apr. 01 2014

# **2 TEST CONFIGURATION**

# 2.1 Justification

The system was configured for testing in a typical fashion (as normally used by a typical user).

# 2.2 EUT Exercise Software

The EUT exercising program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The software offered by manufacture, can let the EUT being normal operation.

# 2.3 Special Accessories

As shown in section 2.5, interface cable used for compliance testing is shielded as normally supplied by **SHENZHEN BAICHUAN SECURITY TECHNOLOGY CO., LTD** and its respective support equipment manufacturers.

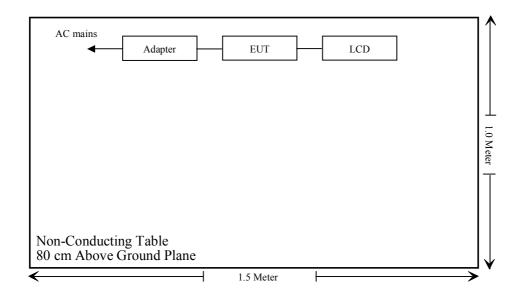
# 2.4 Equipment Modifications

The EUT tested was not modified by EST.

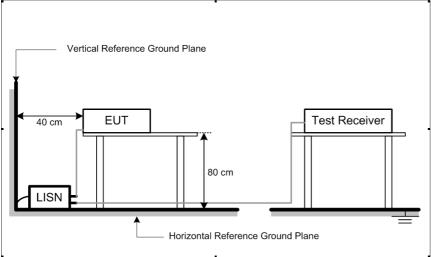
# 2.5 Basic Test Setup Block Diagram

2.5.1 Setup on the tableton

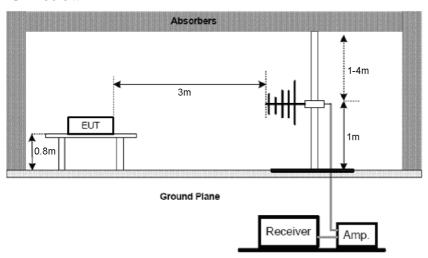
Z.o. i Octup on ti	ic tabletop
Adapter:	Company: SHENZHEN FUJIA APPLIANCE CO LTD
	Model: FJ-SW0502000DU
	DC Cable: 1.5 meters, without core
LCD:	Company: AOC
	Model: ŤFT24660AG
HDMI Cable	1.5 meters, without core



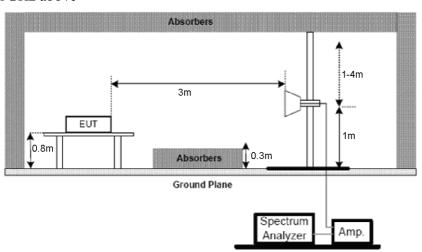
# 2.5.2 Conducted emission Setup



# 2.5.3 Radiated Emission Setup 1GHz below



# 1GHz above



# 3 - DISTURBANCE VOLTAGE AT THE MAINS TERMINALS

# 3.1 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, and LISN.

The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is ±2.4 dB.

# 3.2 Limit of Disturbance Voltage at The Mains Terminals (FCC PART 15.207)

Frequency Range (MHz)	Limits ( dBuV)				
Trequency ixange (Minz)	Quasi-Peak	Average			
0.150~0.500	66~56	56~46			
0.500~5.000	56	46			
5.000~30.00	60	50			

Note: (1)The tighter limit shall apply at the edge between two frequency bands.

(2) Decreases with the logarithm of the frequency.

# 3.3 EUT Setup

The setup of EUT is according with ANSI C63.4-2009 measurement procedure. The specification used was the FCC Rules and Regulations Part 15.207 limits.

The EUT was placed center and the back edge of the test table.

The spacing between the peripherals was 10 cm.

Maximum emission emitted from EUT was determined by manipulating the EUT, support equipment, interconnecting cables and varying the mode of operation and the levels in the final result of the test were recorded with the EUT running in the operating mode that maximum emission was emitted.

# 3.4 Instrument Setup

The test receiver was set with the following configurations:

Test Receiver Setting:

Sweep Speed.....Auto
IF Band Width.....9 KHz

#### 3.5 Test Procedure

During the conducted emission test, the EUT power cord was connected to the auxiliary outlet of the first Artificial Mains.

Maximizing procedure was performed on the highest emissions to ensure EUT compliance using all installation combination.

All data was recorded in the peak detection mode. Quasi-peak and Average readings were only performed when an emission was found to be marginal (within -10 dB $\mu$ V of specification limits). Quasi-peak readings are distinguished with a "**QP**". Average readings are distinguished with a "**AV**".

# 3.6 Test Situation

Temperature ( °C )	22
Humidity ( %RH )	58
Barometric Pressure ( mbar )	1001
EUT	WIFI Network Video Recorder
M/N	SRNVW-470LCD-US
Operating Mode	On mode

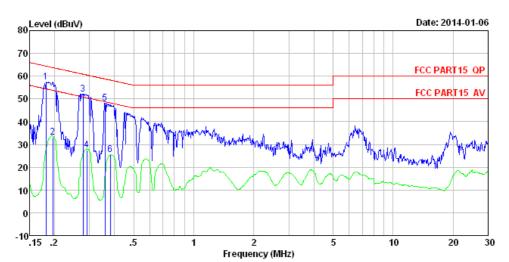
Remark: (1) When PK reading is less than relevant limit 20dB, the QP reading and AV reading will not be recorded.

- (2) Where QP reading is less than relevant AV limit, the AV reading will not be measured (3) When AV reading is less than relevant limit 20dB, the AV reading will not be recorded.

# 3.7 Test Result

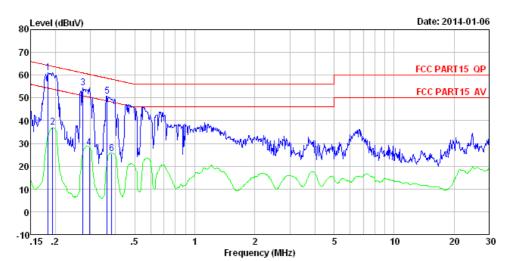
# **Pass**

Details see the following pages.



Condition: FCC PART15 QP LISN-2013 LINE
EUT: WIFI Network Video Recorder
Model: SRNVW-470LCD-US
Test Mode: On mode
Power Rating: AC 120V/60Hz
Test Engineer: David

	Freq	Read Level		Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1 2 3 4 5 6	0.182 0.197 0.279 0.291 0.360 0.381	57. 31 33. 00 52. 06 27. 40 47. 87 25. 36	0.14 0.14 0.11 0.11 0.11 0.11	0.13 0.10 0.10 0.10	57. 58 33. 27 52. 27 27. 61 48. 08 25. 57	53. 76 60. 85 50. 50 58. 74	-8.58 -22.89 -10.66	Average QP Average



Condition: FCC PART15 QP LISN-2013 NEUTRAL EUT: WIFI Network Video Recorder Model: SRNVW-470LCD-US Test Mode: On mode Power Rating: AC 120V/60Hz Test Engineer: David

lest	Engineer:						_		
	Fmaa	Read Level	LISN	Cable Loss		Limit	Over	Pomonle	
	rreq	rever	ractor	LUSS	rever	Line	LIMIL	Kemark	
	MHz	dBuV	<u>−−</u> dB	dB	dBuV	dBuV	dB		
1	0.183	60.88	0. 07	0.13	61.08	64, 33	-3. 25	ΩP	
2 3	0.193	36.84	0.07					Äverage	
3	0.274	54.20	0.06	0.10	54.36	60.98	-6.62	QP	
4	0.296	28.13	0.06	0.10	28.29	50.37	-22.08	Average	
5	0.363	50.64	0.06	0.10	50.80	58.65	-7.85	QP	
6	0.383	25.45	0.06	0.10	25.61	48.21	-22.60	Average	

# **4 RADIATED DISTURBANCES**

# **4.1 Measurement Uncertainty**

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement is +4.0 dB.

# 4.2 Limit of Radiated Disturbances (FCC Part 15.209)

Frequency (MHz)	Distance (Meters)	Field Strengths Limits (dBμV/m)
30 ~ 88	3	40
88 ~216	3	43.5
216 ~ 960	3	46
960~1000	3	54

Note: (1) The tighter limit shall apply at the edge between two frequency bands.

(2) Distance refers to the distance in meters between the test instrument antenna and the closest point of any part of the E.U.T.

# 4.3 EUT Setup

The radiated emission tests were performed in the in the 3-meter anechoic chamber, using the setup accordance with the ANSI C63.4-2009. The specification used was the FCC Part 15 limits.

The EUT was placed on the center of the test table.

Maximum emission emitted from EUT was determined by manipulating the EUT, support equipment, interconnecting cables and varying the mode of operation and the levels in the final result of the test were recorded with the EUT running in the operating mode that maximum emission was emitted.

### 4.4 Test Receiver Setup

According to FCC Part 15 rule, the frequency was investigated from 30 to 1000 MHz. During the radiated emission test, the test receiver was set with the following configurations:

# Test Receiver Setting:

Detector	Peak & Quasi-Peak
IF Band Width	
Frequency Range	30MHz to 1000MHz
Turntable Rotated	0 to 360 degrees

# Antenna Position:

#### 4.5 Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All data was recorded in the peak detection mode. Quasi-peak readings performed only when an emission was found to be marginal (within -10 dB $_{\mu}$ V of specification limits), and are distinguished with a "QP" in the data table.

# 4.6 Radiated Emissions Test Result

Temperature ( °C )	26	
Humidity ( %RH )	56	
Barometric Pressure ( mbar )	1001.1	
EUT	WIFI Network Video Recorder	
M/N	SRNVW-470LCD-US	
Operating Mode	On mode	

Test data see following pages.

**Remark**: (1) When PK reading is less than relevant limit 20dB, the QP reading and AV reading will not be recorded.

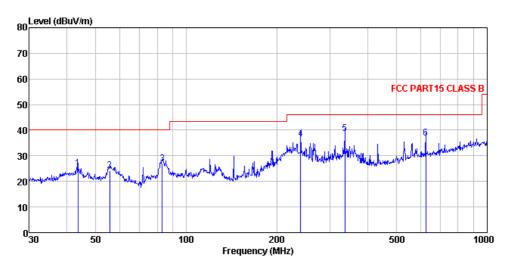
(2) Where QP reading is less than relevant AV limit, the AV reading will not be measured

### 4.7 Test Result

Pass.

Details see the following pages.

# **Radiated Emission Test Data**

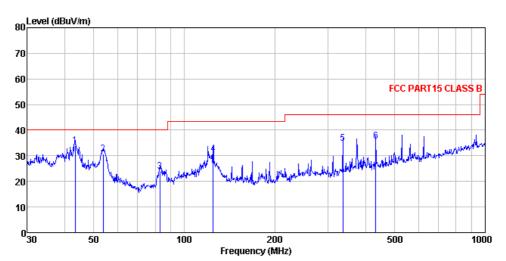


Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163 ORIGINAL HORIZONTAL
EUT : WIFI Network Video Recorder
Model : SRNVW-470LCD-US
Test Mode : On mode
Power Rating : AC 120V/60Hz
Test Engineer: David

Readintenne Cable Presson Limit Over

	Freq	ReadA Level			Preamp Factor				Remark
-	MHz	dBu∜	dB/m	dB	dB	$\overline{dBuV/m}$	$\overline{dBuV/m}$	dB	
1 2 3 4 5	83.230 239.987 336.035	40.49 45.71 52.65	11.72 14.09 15.99	0.82 1.06 2.07 2.55	32.02 31.95 31.75 32.16 32.07 31.08	24.33 26.74 36.65 38.63	40.00 40.00 46.00 46.00	-15.67 -13.26 -9.35 -7.37	QP QP QP QP

### **Radiated Emission Test Data**



Site Condition EUT

: 3m chamber : FCC PART15 CLASS B 3m VULB9163 ORIGINAL VERTICAL : WIFI Network Video Recorder : SRNVW-470LCD-US

### WIFI Network
Model : SRNVW-470LCDTest Mode : On mode
Power Rating : AC 120V/60Hz
Test Engineer: David

ReadAntenna Cable Preamp Limit Over Freq Level Factor Loss Factor Level Line Limit Remark dBuV dB/m MHz ₫B dB dBuV/m dBuV/m 43.353 53.693 82.938 124.569 49.76 46.79 43.04 49.40 48.35 15.56 15.07 11.57 11.80 15.99 17.53 0.70 0.81 1.05 1.40 2.55 32.02 31.95 31.75 31.88 32.07 31.78 34.00 30.72 23.91 30.72 34.82 35.64 40.00 -6.00 QP 40.00 -9.28 QP 40.00 -16.09 QP 43.50 -12.78 QP 46.00 -11.18 QP 46.00 -10.36 QP 1 2 3 4 5 6 336.035 432.546 46.88 3.01

# 5 - FCC Part 15.247 Requirements

Testing was performed in accordance with CFR 47 Part 15.247.

This test measures the levels emanating from the EUT, thus evaluating the potential for the EUT to cause radio frequency interference to other electronic devices.

# **5.1 Output Power Requirements**

The maximum output power requirement is the maximum equivalent isotropic radiated power delivering at the transmitting antenna under specified conditions of measurements in the presence of modulation.

The maximum output power and harmonics shall not exceed CFR47 Part 15.247 (b3, b4). The maximum transmitted power is + 30 dBm or 1 Watt.

#### 5.1.1 Test Method

The conducted method was used to measure the channel power output according to ANSI C63.4:2009. The measurement was performed with modulation per CFR47 Part 15.247 (b3). This test was conducted on 3 channels of Sample. The worst mode result indicated below.

**Test Setup** 



#### 5.1.2 Test Results

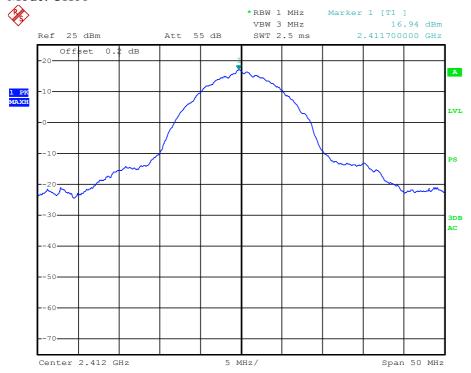
Please refer the following pages.

Barometric Pressure ( mbar )	1000.8	
Temperature	23° C	
Relative Humidity	54 %	
EUT	WIFI Network Video Recorder	
M/N	SRNVW-470LCD-US	
Operation Condition	TX 11B Mode CH01 / CH06 / CH11	
Testing Engineer	David	

Output Power				
Operating Channel	Limit	Output Level	Margin	
(MHz)	(dBm)	(dBm)	(dB)	
2412	30	16.94	13.06	
2437	30	17.56	12.44	
2462	30	18.00	12.00	

# Result: Pass

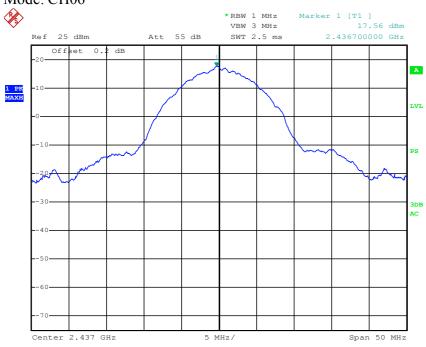
# Mode: CH01



Date: 27.DEC.2013 02:07:00

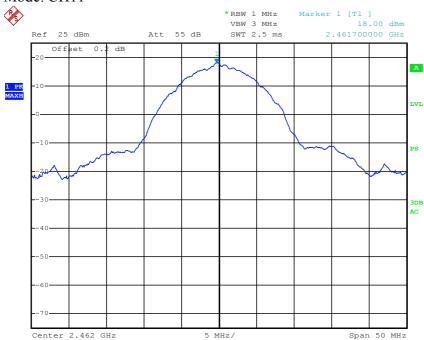
# FCC ID: 2ABN7-470LCD





Date: 27.DEC.2013 02:07:50

# Mode: CH11



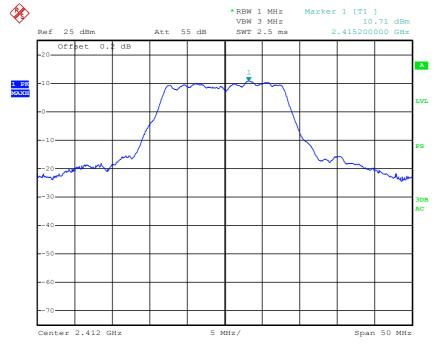
Date: 27.DEC.2013 02:08:27

Barometric Pressure ( mbar )	1000.8	
Temperature	23° C	
Relative Humidity	54 %	
EUT	WIFI Network Video Recorder	
M/N	SRNVW-470LCD-US	
Operation Condition	TX 11G Mode CH01 / CH06 / CH11	
Testing Engineer	David	

Output Power				
Operating Channel	Limit	Output Level	Margin	
(MHz)	(dBm)	(dBm)	(dB)	
2412	30	10.71	19.29	
2437	30	11.07	18.93	
2462	30	11.66	18.34	

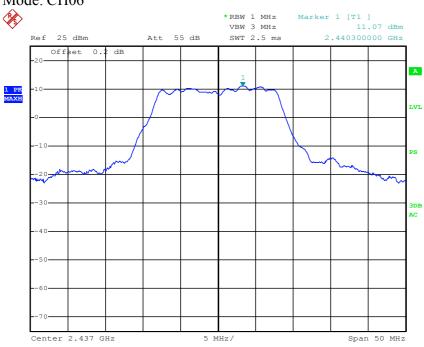
Result: Pass





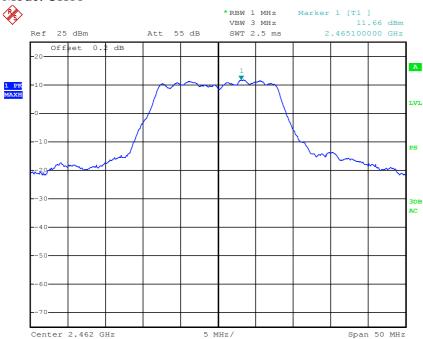
Date: 27.DEC.2013 02:10:17





Date: 27.DEC.2013 02:09:53

# Mode: CH11



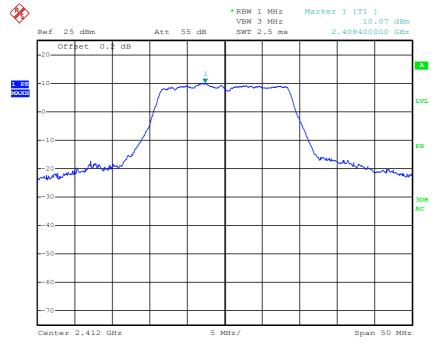
Date: 27.DEC.2013 02:09:09

Barometric Pressure ( mbar )	1000.8
Temperature	23° C
Relative Humidity	54 %
EUT	WIFI Network Video Recorder
M/N	SRNVW-470LCD-US
Operation Condition	TX 11N20 Mode CH01 / CH06 / CH11
Testing Engineer	David

Output Power				
Operating Channel	Limit	Output Level	Margin	
(MHz)	(dBm)	(dBm)	(dB)	
2412	30	10.07	19.93	
2437	30	10.53	19.47	
2462	30	10.93	19.07	

Result: Pass

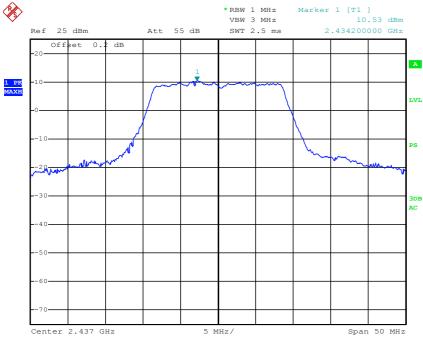




Date: 27.DEC.2013 02:10:50

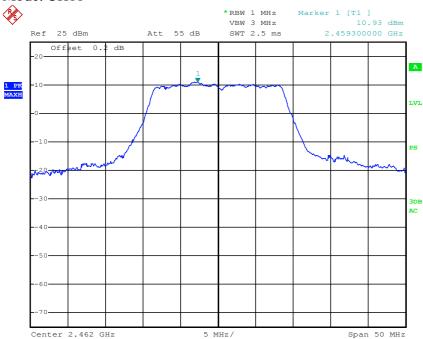
### FCC ID: 2ABN7-470LCD





Date: 27.DEC.2013 02:11:12

# Mode: CH11



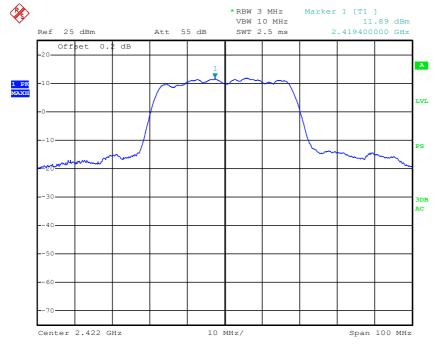
Date: 27.DEC.2013 02:11:40

Barometric Pressure ( mbar )	1000.8	
Temperature	23° C	
Relative Humidity	54 %	
EUT	WIFI Network Video Recorder	
M/N	SRNVW-470LCD-US	
Operation Condition	TX 11N40 Mode CH03 / CH06 / CH09	
Testing Engineer	David	

Output Power				
Operating Channel	Limit	Output Level	Margin	
(MHz)	(dBm)	(dBm)	(dB)	
2422	30	11.89	18.11	
2437	30	12.13	17.87	
2452	30	12.65	17.35	

Result: Pass

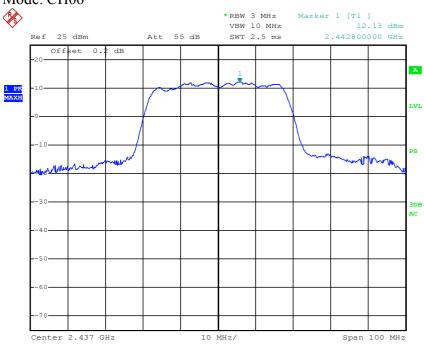




Date: 27.DEC.2013 02:13:24

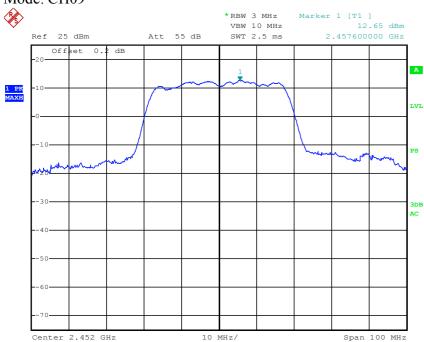
### FCC ID: 2ABN7-470LCD





Date: 27.DEC.2013 02:13:59

# Mode: CH09



Date: 27.DEC.2013 02:14:27

# 5.2 Occupied Bandwidth Requirements

The occupied bandwidth is measured at an amplitude level reduced from the reference level by a specified ratio. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency.

The 99% bandwidth is the bandwidth in which 99% of the transmitted power occupied.

The 6 dB bandwidth is defined the bandwidth of 6 dBr from highest transmitted level of the fundamental frequency.

The bandwidth shall be at least 500 kHz via Section CFR47 15.247(a2).

#### 5.2.1 Test Method

The conducted method was used to measure the channel power output according to ANSI C63.4:2009. The measurement was performed with modulation per CFR47 Part 15.247 (a2). This test was conducted on 3 channels of Sample. The worst mode result indicated below.

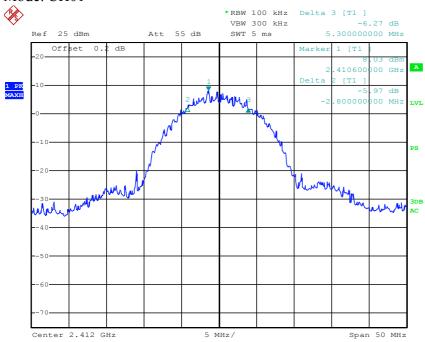
# RF Shielded Chamber Spectrum Analyzer 16 dB Coupler EUT Power Meter and Sensor

# **5.2.2 Test Results**

Barometric Pressure ( mbar )	1000.8
Temperature	23° C
Relative Humidity	54 %
EUT	WIFI Network Video Recorder
M/N	SRNVW-470LCD-US
Operation Condition	TX 11B Mode CH01 / CH06 / CH11
Testing Engineer	David

6dB Bandwidth(MHz)				
Operating Channel (MHz)	Limit	Bandwidth (MHz)	Result	
2412	> 500kHz	8.10	PASS	
2437	> 500kHz	8.30	PASS	
2462	> 500kHz	8.30	PASS	

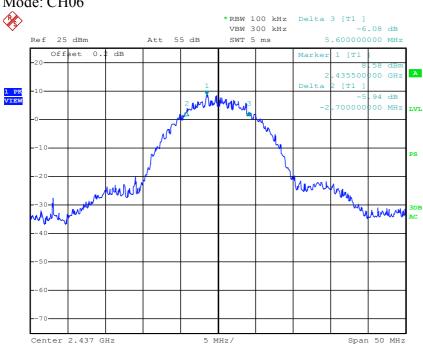
# Mode: CH01



Date: 27.DEC.2013 02:20:02

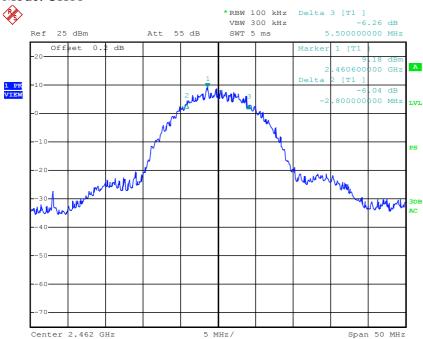
# FCC ID: 2ABN7-470LCD





Date: 27.DEC.2013 02:21:24

# Mode: CH11

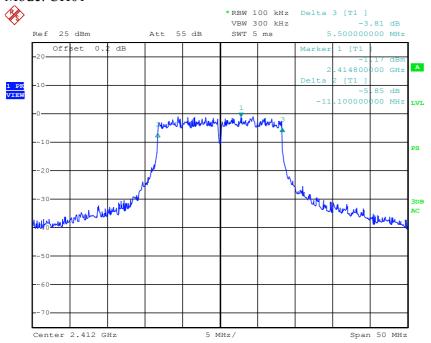


Date: 27.DEC.2013 02:22:37

Barometric Pressure ( mbar )	1000.8	
Temperature	23° C	
Relative Humidity	54 %	
EUT	WIFI Network Video Recorder	
M/N	SRNVW-470LCD-US	
Operation Condition	TX 11G Mode CH01 / CH06 / CH11	
Testing Engineer	David	

6dB Bandwidth(MHz)					
Operating Channel (MHz)	Limit	Bandwidth (MHz)	Result		
2412	> 500kHz	16.60	PASS		
2437	> 500kHz	16.60	PASS		
2462	> 500kHz	16.60	PASS		

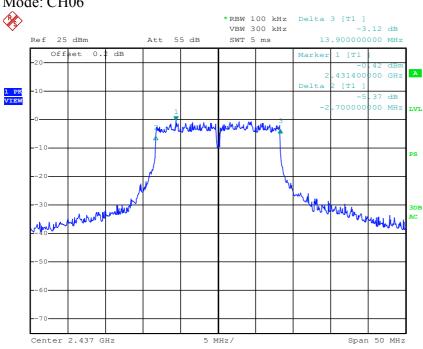
# Mode: CH01



Date: 27.DEC.2013 02:30:00

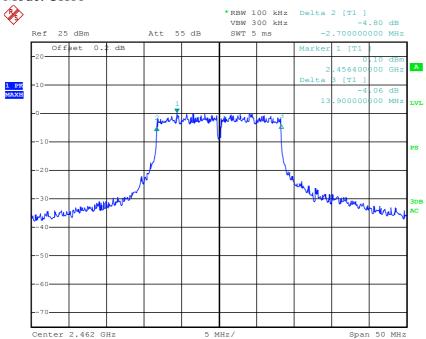
#### FCC ID: 2ABN7-470LCD





Date: 27.DEC.2013 02:29:13

# Mode: CH11

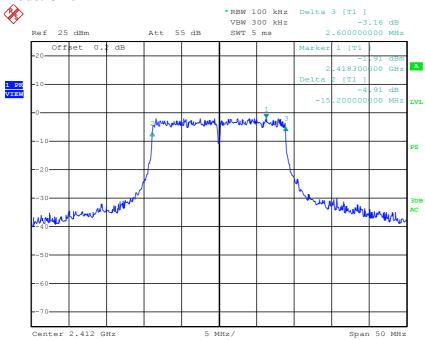


Date: 27.DEC.2013 02:25:15

Barometric Pressure ( mbar )	1000.8		
Temperature	23° C		
Relative Humidity	54 %		
EUT	WIFI Network Video Recorder		
M/N	SRNVW-470LCD-US		
Operation Condition	TX 11N20 Mode CH01 / CH06 / CH11		
Testing Engineer	David		

6dB Bandwidth(MHz)					
Operating Channel (MHz)	Limit	Result			
2412	> 500kHz	17.80	PASS		
2437	> 500kHz	17.90	PASS		
2462	> 500kHz	17.90	PASS		

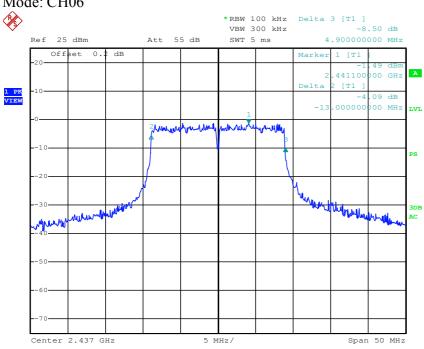
# Mode: CH01



Date: 27.DEC.2013 02:31:05

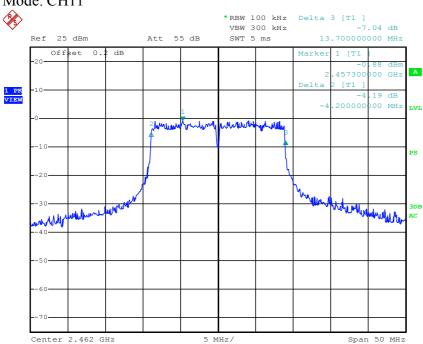
#### FCC ID: 2ABN7-470LCD





Date: 27.DEC.2013 02:32:17

# Mode: CH11

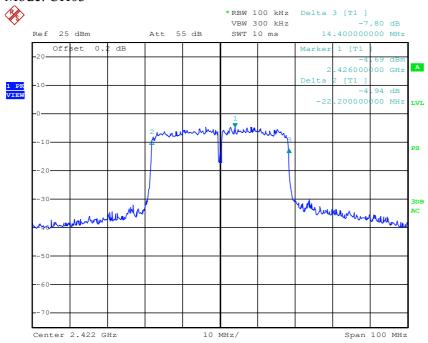


Date: 27.DEC.2013 02:33:37

Barometric Pressure ( mbar )	1000.8		
Temperature	23° C		
Relative Humidity	54 %		
EUT	WIFI Network Video Recorder		
M/N	SRNVW-470LCD-US		
Operation Condition	TX 11N40 Mode CH03 / CH06 / CH09		
Testing Engineer	David		

6dB Bandwidth(MHz)					
Operating Channel (MHz)	Limit	Bandwidth Result			
2422	> 500kHz	36.60	PASS		
2437	> 500kHz	36.20	PASS		
2452	> 500kHz	36.40	PASS		

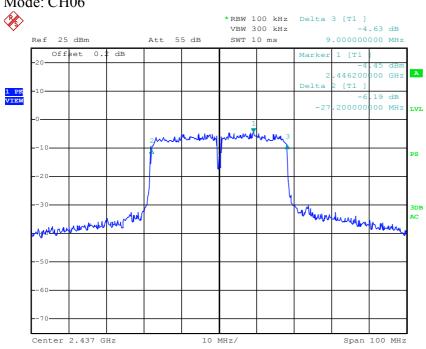
# Mode: CH03



Date: 27.DEC.2013 02:37:26

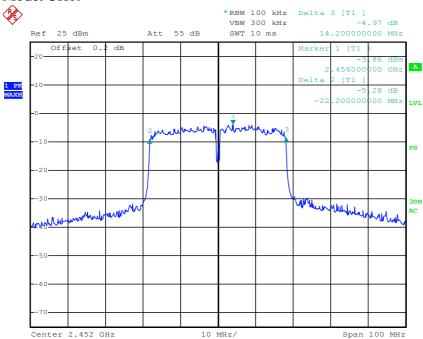
#### FCC ID: 2ABN7-470LCD





Date: 27.DEC.2013 02:36:16

# Mode: CH09



Date: 27.DEC.2013 02:35:28

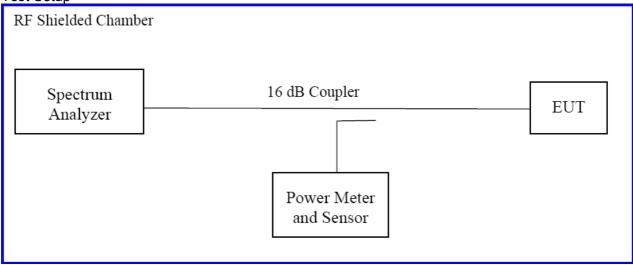
# 5.3 Band Edge Requirements

The setup was identical to RF output power measurement. Intentional radiators operating under the alternative provisions to the general emission limits, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If the frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

Any frequency outside the band of 2400 MHz to 2483.5 MHz, the power output level must be below 20 dB from the in-band transmitting signal: CFR 47 Part 15.215, 15.247(d).

#### 5.3.1 Test Method

The conducted method was used to measure the channel power output according to ANSI C63.4:2009. The measurement was performed with modulation per CFR47 Part 15.215, 15.247 (d). This test was conducted on 2 channels of Sample. The worst mode result indicated below. Test Setup



# **5.3.2** Test Results

Barometric Pressure ( mbar )	1000.8
Temperature	23° C
Relative Humidity	54 %
EUT	WIFI Network Video Recorder
M/N	SRNVW-470LCD-US
Operation Condition	TX 11B Mode CH01 / CH11
Testing Engineer	David

Result: Pass

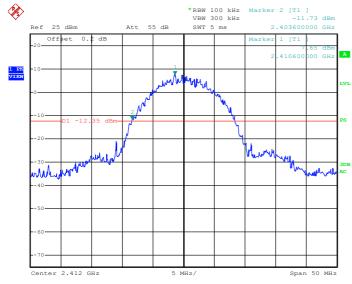
Out of Band Edge Results (below 2390MHz)						
Frequency (MHz)	Band Edge Level (dBuV/m)		Limit (dBuV/m)		Direction (H/V)	Result
(IVII IZ)	PK	AV	PK	AV	(11/0)	
2100	43.05	31.88	74	54	Н	Pass
2390	44.49	32.19	74	54	Н	Pass
2100	42.92	32.46	74	54	V	Pass
2390	44.58	33.03	74	54	V	Pass

Out of Band Edge Results (above 2483.5MHz)						
Frequency (MHz)	Band Edge Level (dBuV/m)		Limit (dBuV/m)		Direction (H/V)	Result
(IVII IZ)	PK	AV	PK	AV	(11/0)	
2483.5	47.86	35.20	74	54	Н	Pass
2500	46.08	33.83	74	54	Н	Pass
2483.5	49.53	36.11	74	54	V	Pass
2500	46.17	34.21	74	54	V	Pass

Emissions attenuated more than 20 dB below the permissible value are not reported.

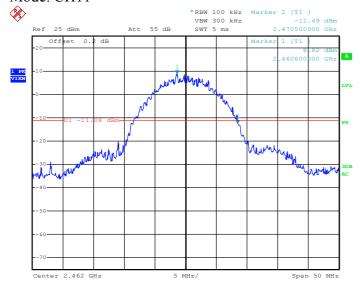
Band Edge Results						
Operating Channel Frequency 20dB Level Result						
2412	2403.6	-11.73	Pass			
2462	2470.5	-12.49	Pass			

# Mode: CH01



Date: 27.DEC.2013 02:49:49

# Mode: CH11



Date: 27.DEC.2013 02:51:53

Barometric Pressure ( mbar )	1000.8
Temperature	23° C
Relative Humidity	54 %
EUT	WIFI Network Video Recorder
M/N	SRNVW-470LCD-US
Operation Condition	TX 11G Mode CH01 / CH11
Testing Engineer	David

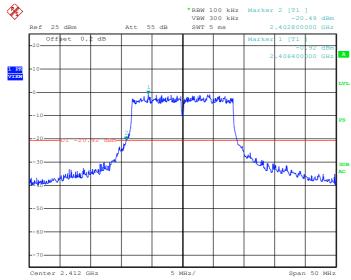
Out of Band Edge Results (below 2390MHz)							
Frequency (MHz)		ge Level V/m)	Limit (dBuV/m)		Direction (H/V)	Result	
(IVII IZ)	PK	AV	PK	AV	(11/0)		
2100	45.83	31.49	74	54	Н	Pass	
2390	48.32	33.43	74	54	Н	Pass	
2100	44.19	32.46	74	54	V	Pass	
2390	43.10	32.21	74	54	V	Pass	

Out of Band Edge Results (above 2483.5MHz)							
Frequency		ge Level V/m)	Limit (dBuV/m)		Direction	Result	
(MHz)	PK	AV	PK	AV	(H/V)		
2483.5	45.61	33.52	74	54	Н	Pass	
2500	49.00	35.40	74	54	Н	Pass	
2483.5	47.90	33.13	74	54	V	Pass	
2500	47.11	34.29	74	54	V	Pass	

Emissions attenuated more than 20 dB below the permissible value are not reported.

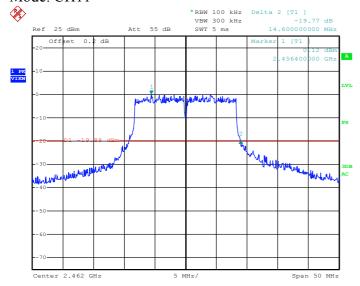
Band Edge Results						
Operating Channel Frequency 20dB Level Result						
2412	2402.8	-20.49	Pass			
2462	2471.0	-19.77	Pass			

# Mode: CH01



Date: 27.DEC.2013 02:54:46

# Mode: CH11



Date: 27.DEC.2013 02:53:19

Barometric Pressure ( mbar )	1000.8
Temperature	23° C
Relative Humidity	54 %
EUT	WIFI Network Video Recorder
M/N	SRNVW-470LCD-US
Operation Condition	TX 11N20 Mode CH01 / CH11
Testing Engineer	David

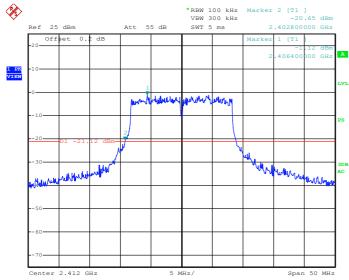
Out of Band Edge Results (below 2390MHz)							
Frequency (MHz)		ge Level V/m)	Limit (dBuV/m)		Direction (H/V)	Result	
(IVII IZ)	PK	AV	PK	AV	(11/0)		
2100	42.48	29.96	74	54	Н	Pass	
2390	45.38	34.66	74	54	Н	Pass	
2100	41.97	30.51	74	54	V	Pass	
2390	42.86	33.05	74	54	V	Pass	

Out of Band Edge Results (above 2483.5MHz)							
Frequency		ge Level V/m)	Limit (dBuV/m)		Direction (H/V)	Result	
(MHz)	PK	AV	PK	AV	(11/0)		
2483.5	44.67	32.85	74	54	Н	Pass	
2500	46.22	32.35	74	54	Н	Pass	
2483.5	45.38	30.64	74	54	V	Pass	
2500	46.77	32.68	74	54	V	Pass	

Emissions attenuated more than 20 dB below the permissible value are not reported.

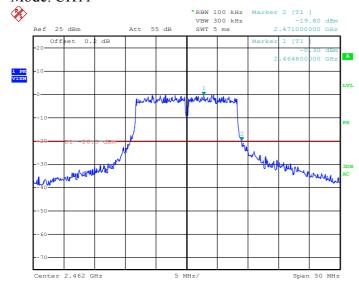
Band Edge Results						
Operating Channel (MHz)	Frequency (MHz)	20dB Level (dBm)	Result			
2412	2402.8	-20.65	Pass			
2462	2471.0	-19.80	Pass			

# Mode: CH01



Date: 27.DEC.2013 03:10:29

# Mode: CH11



Date: 27.DEC.2013 03:12:01

Barometric Pressure ( mbar )	1000.8
Temperature	23° C
Relative Humidity	54 %
EUT	WIFI Network Video Recorder
M/N	SRNVW-470LCD-US
Operation Condition	TX 11N40 Mode CH03 / CH09
Testing Engineer	David

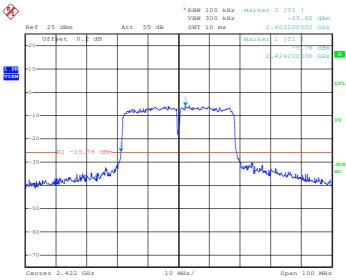
Out of Band Edge Results (below 2390MHz)							
Frequency (MHz)		ge Level V/m)	Limit (dBuV/m)		Direction (H/V)	Result	
(IVII IZ)	PK	AV	PK	AV	(11/0)		
2100	44.25	31.45	74	54	Н	Pass	
2390	47.16	32.96	74	54	Н	Pass	
2100	45.14	30.07	74	54	V	Pass	
2390	49.21	33.12	74	54	V	Pass	

Out of Band Edge Results (above 2483.5MHz)							
Frequency		ge Level V/m)	Limit (dBuV/m)		Direction	Result	
(MHz)	PK	AV	PK	AV	(H/V)		
2483.5	50.27	34.15	74	54	Н	Pass	
2500	47.71	32.56	74	54	Н	Pass	
2483.5	50.19	34.56	74	54	V	Pass	
2500	48.27	32.63	74	54	V	Pass	

Emissions attenuated more than 20 dB below the permissible value are not reported.

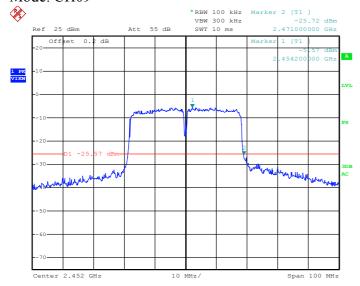
Band Edge Results				
Operating Channel Frequency 20dB Level Result				
2422	2403.2	-25.60	Pass	
2452	2471.0	-25.72	Pass	

# Mode: CH03



Date: 27.DEC.2013 03:14:58

# Mode: CH09



Date: 27.DEC.2013 03:13:41

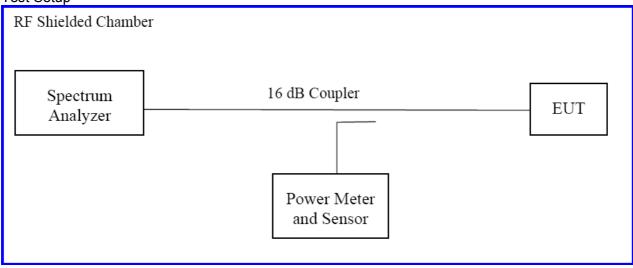
# 5.4 Peak Power Spectral Density Requirements

According to the CFR47 Part 15.247 (e), the spectral power density output of the antenna port shall be less than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

### 5.4.1 Test Method

The conducted method was used to measure the channel power output according to ANSI C63.4:2009. The measurement was performed with modulation per CFR47 Part 15.247 (e). This test was conducted on 3 channels of Sample. The worst mode result indicated below.

### **Test Setup**



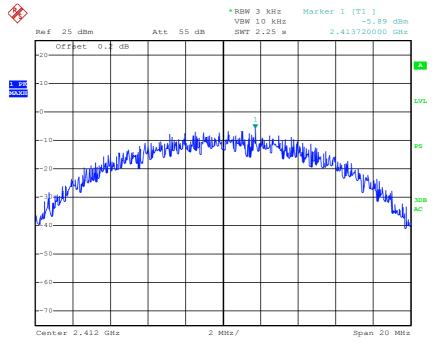
# **5.4.2 Test Results**

Barometric Pressure ( mbar )	1000.8
Temperature	23° C
Relative Humidity	54 %
EUT	WIFI Network Video Recorder
M/N	SRNVW-470LCD-US
Operation Condition	TX 11B Mode CH01 / CH06 / CH11
Testing Engineer	David

		_				
	Output Power					
Operating Channel	Limit	PPSD	Margin			
(MHz)	(dBm)	(dBm)	(dB)			
2412	8	-5.89	13.89			
2437	8	-5.18	13.18			
2462	8	-4.89	12.89			

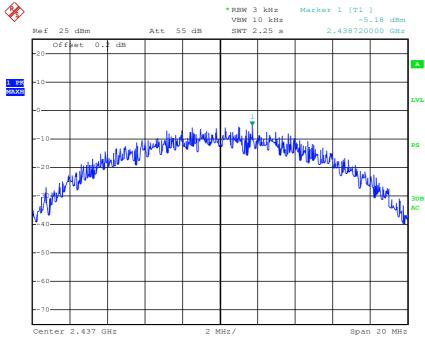
Result: Pass

Mode: CH01



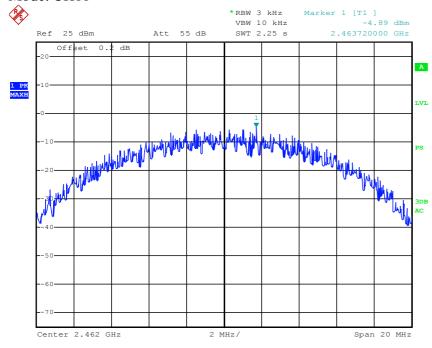
Date: 27.DEC.2013 02:39:06





Date: 27.DEC.2013 02:39:38

### Mode: CH11

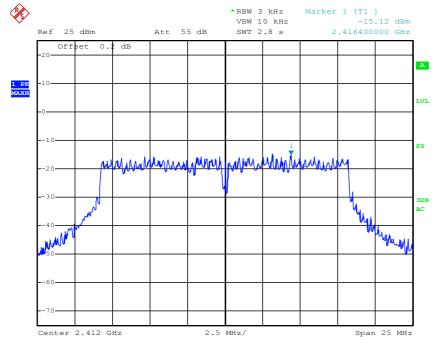


Date: 27.DEC.2013 02:40:06

Barometric Pressure ( mbar )	1000.8
Temperature	23° C
Relative Humidity	54 %
EUT	WIFI Network Video Recorder
M/N	SRNVW-470LCD-US
Operation Condition	TX 11G Mode CH01 / CH06 / CH11
Testing Engineer	David

Output Power				
Operating Channel	Limit	PPSD	Margin	
(MHz)	(dBm)	(dBm)	(dB)	
2412	8	-15.12	23.12	
2437	8	-14.70	22.70	
2462	8	-13.91	21.91	

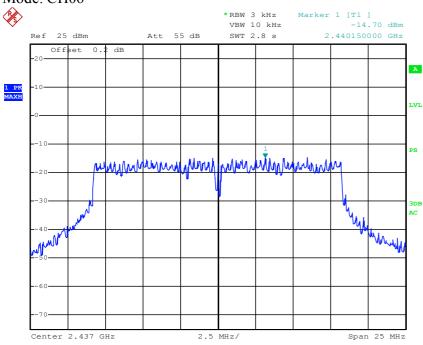




Date: 27.DEC.2013 02:42:26

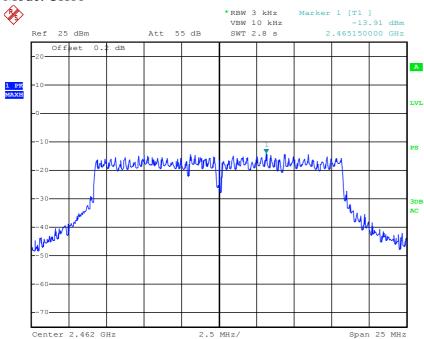
#### FCC ID: 2ABN7-470LCD





Date: 27.DEC.2013 02:42:00

### Mode: CH11

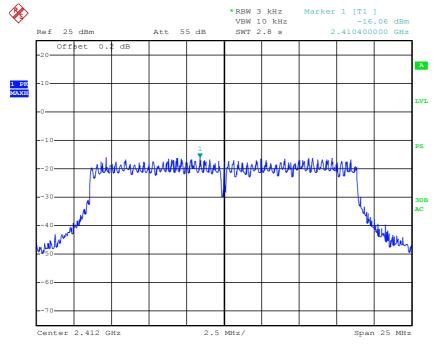


Date: 27.DEC.2013 02:41:29

Barometric Pressure ( mbar )	1000.8
Temperature	23° C
Relative Humidity	54 %
EUT	WIFI Network Video Recorder
M/N	SRNVW-470LCD-US
Operation Condition	TX 11N20 Mode CH01 / CH06 / CH11
Testing Engineer	David

Output Power				
Operating Channel	Limit	PPSD	Margin	
(MHz)	(dBm)	(dBm)	(dB)	
2412	8	-16.06	24.06	
2437	8	-15.23	23.23	
2462	8	-14.60	22.60	

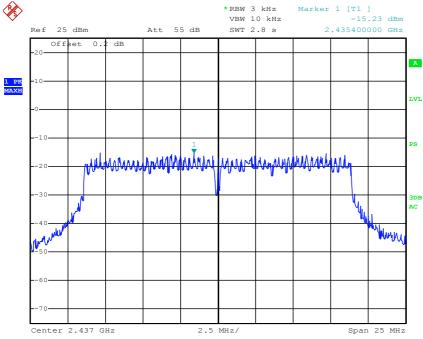




Date: 27.DEC.2013 02:43:01

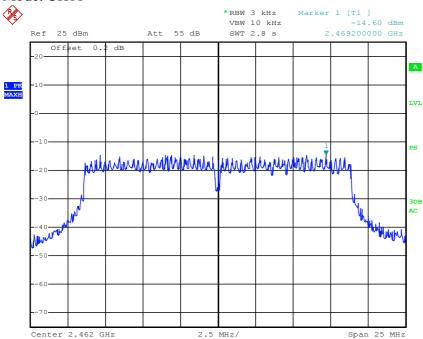
#### FCC ID: 2ABN7-470LCD





Date: 27.DEC.2013 02:43:28

### Mode: CH11

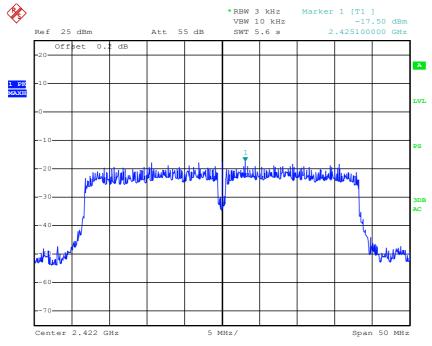


Date: 27.DEC.2013 02:44:14

Barometric Pressure ( mbar )	1000.8
Temperature	23° C
Relative Humidity	54 %
EUT	WIFI Network Video Recorder
M/N	SRNVW-470LCD-US
Operation Condition	TX 11N40 Mode CH03 / CH06 / CH09
Testing Engineer	David

Output Power				
Operating Channel	Limit	PPSD	Margin	
(MHz)	(dBm)	(dBm)	(dB)	
2422	8	-17.50	25.50	
2437	8	-17.38	25.38	
2452	8	-16.93	24.93	

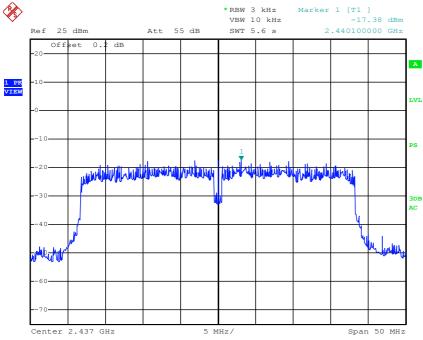




Date: 27.DEC.2013 02:47:17

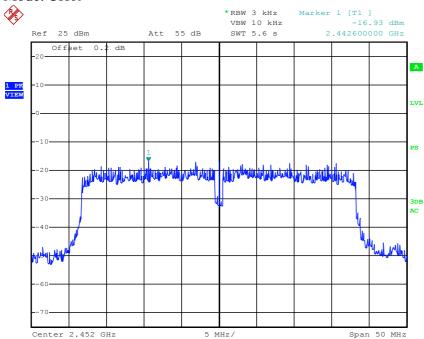
#### FCC ID: 2ABN7-470LCD





Date: 27.DEC.2013 02:46:21

### Mode: CH09



Date: 27.DEC.2013 02:45:45

### 5.5 Maximum Permissible Exposure Requirements

#### 5.5.1 Test Methodology

In this document, we try to prove the safety of radiation harmfulness to the human body for our product. The limit for Maximum Permissible Exposure (MPE) specified in FCC 1.1310 is followed. The Gain of the antenna used in this product is measured in a Semi-Anechoic Chamber, and also the maximum total power input to the antenna is measured. Through the Friis transmission formula and the maximum gain of the antenna, we can calculate the distance, away from the product, where the limit of MPE is reached.

Although the Friis transmission formula is a far field assumption, the calculated result of that is an over-prediction for near field power density. We will take that as the worst case to specify the safety range.

#### 5.5.2 RF Exposure Limit

According to FCC 1.1310 table 1: The criteria listed in the following table shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in 1.1307(b)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm <sup>2</sup> )	Average Time (minutes)
300-1500	-	-	F/300	6
1500-100,000	-	-	5	6
300-1500	-	-	F/1500	6
1500-100,000	-	-	1.0	30

F = Frequency in MHz

#### 5.5.3 EUT Operation Condition

The software provided by Manufacturer enabled the EUT to transmit data at lowest, middle and highest channel individually.

#### 5.5.4 Classification

The antenna of the product, under normal use condition, is at least 20cm away from the body of the user. Warning statement to the user for keeping at least 20cm or more separation distance with the antenna should be included in users manual. So, this device is classified as a Mobile Device.

#### 5.5.5 Test Results

#### 5.5.5.1 Antenna Gain

The transmitting antenna was externally connected. The antenna had the highest gain of **2 dBi** or **1.59** (numeric).

### 5.5.5.2 Sample Calculation

The Friis transmission formula: Pd = (Pout\*G) /  $(4*\pi*R2)$ 

Where;

Pd = power density in mW/cm2 Pout = output power to antenna in mW G = gain of antenna in linear scale  $\pi \approx 3.1416$ 

R = distance between observation point and center of the radiator in cm

# 5.5.5.3 Output Power into Antenna & RF Exposure value at distance 20cm:

Calculations for this report are based on highest power measurement. Limit for MPE (from FCC part 1.1310 table1) is 1.0 mW/cm2

The highest measured channel output power is +18.00 dBm or 63.10 mW

Using the Friss transmission formula, the EIRP is Pout\*G, and R is 20cm.

 $Pd = (63.10*1.59) / (1600\pi) = 0.0200 \text{ mW/cm}^2$ , which is 0.9800 mW/cm<sup>2</sup> below to the limit.

As originally tested, the EUT was found to be compliant to the requirements of the test standard(s).

### **5.6 Transmitter Spurious Emissions**

Transmitter spurious emissions are emissions outside the frequency range of the equipment when the equipment is in transmit mode; per requirement of CFR47 15.205, 15.209, 15.247(d).

#### 5.6.1 Test Methodology

#### 5.6.1.1 Preliminary Test

A test program that controls instrumentation and data logging was used to automate the preliminary RF emission test procedure. The frequency range of interest was divided into sub-ranges to yield a frequency resolution of approximately 120 kHz and provide a reading at each frequency for no more than 12° of turntable rotation. For each frequency sub-range the turntable was rotated 360° while peak emission data was recorded and plotted over the frequency range of interest in horizontal and vertical antenna polarization's. Preliminary emission profile testing was performed inside the anechoic chamber. The EUT was placed on a 1.0m x 1.5m non-conductive table 80cm above the floor. The EUT was positioned as shown in the setup photographs. The receiving antenna was placed at a distance of 3m at a fixed height of 1m. Measurement equipment was located outside of the chamber. A video camera was placed inside the chamber to view the EUT.

#### **5.6.1.2 Final Test**

For each frequency measured, the peak emission was maximized by manipulating the receiving antenna from 1 to 4 meters above the ground plane and placing it at the position that produced the maximum signal strength reading. The turntable was then rotated through 360° while observing the peak signal and placing the EUT at the position that produced maximum radiation. The six highest emissions relative to the limit were measured unless such emissions were more than 20 dB below the limit. If less than six emissions are within 20 dB of the limit, than the noise level of the receiver is measured at frequencies where emissions are expected. Multiples of all oscillator and microprocessor frequencies were also checked.

Final testing was performed on an NSA compliant test site. The EUT was placed on a  $1.0m \times 1.5m$  nonconductive table 80cm above the ground plane. The placement of EUT and cables were the same as for preliminary testing and is shown in the setup photographs.

The final scans performed on the worst axis for three operating channels; 2422 MHz, 2437 MHz, and 2452 MHz for 802.11 N40 mode.

The worst axis for each antennas type was scanned.

#### 5.6.2 Transmitter Spurious Emission Limit

The spurious emissions of the transmitter shall not exceed the values in CFR47 Part 15.205, 15.209:

Measurement Frequency (MHz)	Field strength (microvolts/meter)	distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100 **	3
88-216	150 **	3
216-960	200 **	3
Above 960	500	3

All harmonics and spurious emission which are outside of the restricted band shall be 20 dB below the in-band emission.

**5.6.3 Test Results**The final measurement data was taken under the worst case operating modes, configurations, and/or cable positions. It also reflects the results including any modifications and/or special accessories listed in Sections 1.4 and 1.5.

As originally tested, the EUT was found to be compliant to the requirements of the test standard(s).

# Data (From 9KHz~30MHz):

**Mode: Stand Alone** 

Frequency (MHz)	Read Level (dBuV)	Total Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Remark	Over Limit (dB)	Direction (H/V)	Result
20.11	55.34	-15.90	39.44	49.5	QP	-10.06	-	PASS

# Data (From 30MHz ~ 1GHz):

**Mode: Stand Alone** 

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark	Direction (H/V)
43.66	40.96	15.56	0.70	32.02	25.20	40.00	-14.80	QP	Н
55.61	40.49	14.97	0.82	31.95	24.33	40.00	-15.67	QP	Н
83.23	45.71	11.72	1.06	31.75	26.74	40.00	-13.26	QP	Н
239.99	52.65	14.09	2.07	32.16	36.65	46.00	-9.35	QP	Н
336.04	52.16	15.99	2.55	32.07	38.63	46.00	-7.37	QP	Н
625.08	43.72	20.54	3.82	31.08	37.00	46.00	-9.00	QP	Н
43.35	49.76	15.56	0.70	32.02	34.00	40.00	-6.00	QP	V
53.69	46.79	15.07	0.81	31.95	30.72	40.00	-9.28	QP	V
82.94	43.04	11.57	1.05	31.75	23.91	40.00	-16.09	QP	V
124.57	49.40	11.80	1.40	31.88	30.72	43.50	-12.78	QP	V
336.04	48.35	15.99	2.55	32.07	34.82	46.00	-11.18	QP	V
432.55	46.88	17.53	3.01	31.78	35.64	46.00	-10.36	QP	V

Emissions attenuated more than 20 dB below the permissible value are not reported.

# Data (Above 1GHz to the tenth Harmonic, Average): Mode: 802.11 N40

CH Low(2422MHz)

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark	Direction (H/V)			
2100	32.65	27.43	3.27	31.90	31.45	54	-22.55	Average	Н			
2390	31.97	27.76	3.33	30.10	32.96	54	-21.04	Average	Н			
2400	34.89	27.76	3.37	30.10	35.92	54	-18.08	Average	Н			
2422	82.56	27.56	3.38	30.06	83.44	94	-10.56	Average	Н			
4844	30.08	31.77	5.35	24.10	43.10	54	-10.90	Average	Н			
2100	31.27	27.43	3.27	31.90	30.07	54	-23.93	Average	V			
2390	32.13	27.76	3.33	30.10	33.12	54	-20.88	Average	V			
2400	34.99	27.76	3.37	30.10	36.02	54	-17.98	Average	V			
2422	83.61	27.56	3.38	30.06	84.49	94	-9.51	Average	V			
4844	31.42	31.77	5.35	24.10	44.44	54	-9.56	Average	V			
Note: The	Note: The 3 <sup>th</sup> -10 <sup>th</sup> harmonic and other values more than 20dB below limit are not reported.											

CH Middle(2437MHz)

CH Middle(	2431 WII IZ	)										
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark	Direction (H/V)			
2437	82.94	27.48	3.43	29.99	83.86	94	-10.14	Average	Н			
4874	31.15	31.85	5.40	24.01	44.39	54	-9.61	Average	Н			
2437	83.03	27.48	3.43	29.99	83.95	94	-10.05	Average	V			
4874	31.79	31.85	5.40	24.01	45.03	54	-8.97	Average	V			
N	oth 1 oth 1		1 .1	1	.1 20.17	2.1.1.1:	•,	1				
Note: The	Note: The 3 <sup>th</sup> -10 <sup>th</sup> harmonic and other values more than 20dB below limit are not reported.											

CH High(2452MHz)

CH High(24	32WITZ)											
Frequency (MHz)	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level (dBuV/m)	Limit Line	Over Limit	Remark	Direction (H/V)			
` ′	(dBuV)	(dB/m)	(dB)	(dB)	,	(dBuV/m)	(dB)		(11/ 1)			
2452	83.77	27.48	3.45	29.98	84.72	94	-9.28	Average	Н			
2483.5	32.72	27.87	3.49	29.93	34.15	54	-19.85	Average	Н			
2500	31.80	27.92	3.52	30.68	32.56	54	-21.44	Average	Н			
4904	30.53	31.90	5.44	23.95	43.92	54	-10.08	Average	Н			
2452	84.06	27.48	3.45	29.98	85.01	94	-8.99	Average	V			
2483.5	33.13	27.87	3.49	29.93	34.56	54	-19.44	Average	V			
2500	31.87	27.92	3.52	30.68	32.63	54	-21.37	Average	V			
4904	30.78	31.90	5.44	23.95	44.17	54	-9.83	Average	V			
Note: The	Note: The 3 <sup>th</sup> -10 <sup>th</sup> harmonic and other values more than 20dB below limit are not reported.											

Note: 1, Emissions attenuated more than 20 dB below the permissible value are not reported. 2, The final scans only performed on the worst mode (802.11 N40)

# Data (Above 1GHz to the tenth Harmonic, Peak): Mode: 802.11 N40

CH Low(2422MHz)

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark	Direction (H/V)			
2100	45.45	27.43	3.27	31.90	44.25	74	-29.75	Peak	Н			
2390	46.17	27.76	3.33	30.10	47.16	74	-26.84	Peak	Н			
2400	48.66	27.76	3.37	30.10	49.69	74	-24.31	Peak	Н			
2422	97.82	27.56	3.38	30.06	98.70	114	-15.30	Peak	Н			
4844	43.46	31.77	5.35	24.10	56.48	74	-17.52	Peak	Н			
2100	46.34	27.43	3.27	31.90	45.14	74	-28.86	Peak	V			
2390	48.22	27.76	3.33	30.10	49.21	74	-24.79	Peak	V			
2400	48.69	27.76	3.37	30.10	49.72	74	-24.28	Peak	V			
2422	98.31	27.56	3.38	30.06	99.19	114	-14.81	Peak	V			
4844	44.54	31.77	5.35	24.10	57.56	74	-16.44	Peak	V			
Note: The	Note: The 3 <sup>th</sup> -10 <sup>th</sup> harmonic and other values more than 20dB below limit are not reported.											

CH Middle(2437MHz)

CH Middle(2	LTO/ IVII IZ	/										
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark	Direction (H/V)			
2437	98.47	27.48	3.43	29.99	99.39	114	-14.61	Peak	Н			
4874	45.61	31.85	5.40	24.01	58.85	74	-15.15	Peak	Н			
2437	97.49	27.48	3.43	29.99	98.41	114	-15.59	Peak	V			
4874	45.02	31.85	5.40	24.01	58.26	74	-15.74	Peak	V			
	th th											
Note: The	Note: The 3 <sup>th</sup> -10 <sup>th</sup> harmonic and other values more than 20dB below limit are not reported.											

CH High(2452MHz)

CH HIGH(24	JZIVII IZ)											
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark	Direction (H/V)			
2452	101.20	27.48	3.45	29.98	102.15	114	-11.85	Peak	Н			
2483.5	48.84	27.87	3.49	29.93	50.27	74	-23.73	Peak	Н			
2500	46.95	27.92	3.52	30.68	47.71	74	-26.29	Peak	Н			
4904	48.72	31.90	5.44	23.95	62.11	74	-11.89	Peak	Н			
2452	101.98	27.48	3.45	29.98	102.93	114	-11.07	Peak	V			
2483.5	48.76	27.87	3.49	29.93	50.19	74	-23.81	Peak	V			
2500	47.51	27.92	3.52	30.68	48.27	74	-25.73	Peak	V			
4904	49.03	31.90	5.44	23.95	62.42	74	-11.58	Peak	V			
Note: The	Note: The 3 <sup>th</sup> -10 <sup>th</sup> harmonic and other values more than 20dB below limit are not reported.											

Note: 1, Emissions attenuated more than 20 dB below the permissible value are not reported. 2, The final scans only performed on the worst mode (802.11 N40)