

FCC REPORT

(WIFI)

Applicant: NEXUS TELECOM SERVICES (HK) LIMITED

Address of Applicant: R112, 11/F Hollywood Plaza, Mangkok, Kowloon, Hong Kong

Equipment Under Test (EUT)

Product Name: Mobile Phone

Model No.: GO779

Trade mark: GOMOBILE

FCC ID: 2AHDFGO779

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.247

Date of sample receipt: 29 Feb., 2016

Date of Test: 29 Feb., to 11 Mar., 2016

Date of report issued: 11 Mar., 2016

Test Result: PASS*

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Bruce Zhang
Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the CCIS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

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2 Version

Version No.	Date	Description
00	11 Mar., 2016	Original

Tested by:

Viki zhu

Date:

11 Mar., 2016

Test Engineer

Reviewed by:

Wimer Zhang

Date:

11 Mar., 2016

Project Engineer

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4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203/15.247 (c)	Pass
AC Power Line Conducted Emission	15.207	Pass
Conducted Peak Output Power	15.247 (b)(3)	Pass
6dB Emission Bandwidth 99% Occupied Bandwidth	15.247 (a)(2)	Pass
Power Spectral Density	15.247 (e)	Pass
Band Edge	15.247(d)	Pass
Spurious Emission	15.205/15.209	Pass

Pass: The EUT complies with the essential requirements in the standard.

5 General Information

5.1 Client Information

Applicant:	NEXUS TELECOM SERVICES (HK) LIMITED
Address of Applicant:	R112, 11/F Hollywood Plaza, Mangkok, Kowloon, Hong Kong
Manufacturer	United Creation Technology Co.,Ltd
Address of Manufacturer:	Room 201, Block A, Science & Technology Building Phase-II, Nanhai Av. 1057, Nanshan, Shenzhen, China
Factory:	HuiZhou YouLianXing Electronic Science & Technology Co., Ltd
Address of Factory:	F2, Standard Fctory Building, No 3, Qunle Road, Ma an Town, Huicheng District, Huizhou City 516057, China

5.2 General Description of E.U.T.

Product Name:	Mobile Phone
Model No.:	GO779
Operation Frequency:	2412MHz~2462MHz (802.11b/802.11g/802.11n(H20)) 2422MHz~2452MHz (802.11n(H40))
Channel numbers:	11 for 802.11b/802.11g/802.11(H20) 7 for 802.11n(H40)
Channel separation:	5MHz
Modulation technology: (IEEE 802.11b)	Direct Sequence Spread Spectrum (DSSS)
Modulation technology: (IEEE 802.11g/802.11n)	Orthogonal Frequency Division Multiplexing(OFDM)
Data speed (IEEE 802.11b):	1Mbps, 2Mbps, 5.5Mbps, 11Mbps
Data speed (IEEE 802.11g):	6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps,54Mbps
Data speed (IEEE 802.11n):	Up to 150Mbps
Antenna Type:	Internal Antenna
Antenna gain:	-1.43 dBi
AC adapter:	Model: GO779 Input:100-240V AC, 50/60Hz 0.12A Output:5V DC MAX 500mA
Power supply:	Rechargeable Li-ion Battery DC3.7V-1300mAh

Operation Frequency each of channel For 802.11b/g/n(H20)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412MHz	4	2427MHz	7	2442MHz	10	2457MHz
2	2417MHz	5	2432MHz	8	2447MHz	11	2462MHz
3	2422MHz	6	2437MHz	9	2452MHz		

Operation Frequency each of channel For 802.11n(H40)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
		4	2427MHz	7	2442MHz		
		5	2432MHz	8	2447MHz		
3	2422MHz	6	2437MHz	9	2452MHz		

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

802.11b/802.11g/802.11n (H20)

Channel	Frequency
The lowest channel	2412MHz
The middle channel	2437MHz
The Highest channel	2462MHz

802.11n (H40)

Channel	Frequency
The lowest channel	2422MHz
The middle channel	2437MHz
The Highest channel	2452MHz

5.3 Test environment and mode

Operating Environment:	
Temperature:	24.0 °C
Humidity:	54 % RH
Atmospheric Pressure:	1010 mbar
Test mode:	
Operation mode	Keep the EUT in continuous transmitting with modulation
The sample was placed 0.8m above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.	

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

Per-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.

Mode	Data rate
802.11b	1Mbps
802.11g	6Mbps
802.11n(H20)	6.5Mbps
802.11n(H40)	13.5Mbps

Final Test Mode:

According to ANSI C63.4 standards, the test results are both the “worst case” and “worst setup” 1Mbps for 802.11b, 6Mbps for 802.11g, 6.5Mbps for 802.11n(H20) and 13.5 Mbps for 802.11n(H40). Duty cycle setting during the transmission is 100% with maximum power setting for all modulations.

5.4 Laboratory Facility

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

● **FCC - Registration No.: 817957**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in out files. Registration 817957, February 27, 2012.

● **IC - Registration No.: 10106A-1**

The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

● **CNAS - Registration No.: CNAS L6048**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.

5.5 Laboratory Location

Shenzhen Zhongjian Nanfang Testing Co., Ltd.
Address: No. B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road,
Bao'an District, Shenzhen, Guangdong, China
Tel: +86-755-23118282
Fax: +86-755-23116366


5.6 Test Instruments list

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
1	3m SAC	SAEMC	9(L)*6(W)* 6(H)	CCIS0001	08-23-2014	08-22-2017
2	BiConiLog Antenna	SCHWARZBECK	VULB9163	CCIS0005	03-28-2015	03-28-2016
3	Horn Antenna	SCHWARZBECK	BBHA9120D	CCIS0006	03-28-2015	03-28-2016
4	Pre-amplifier (10kHz-1.3GHz)	HP	8447D	CCIS0003	04-01-2015	03-31-2016
5	Pre-amplifier (1GHz-18GHz)	Compliance Direction Systems Inc.	PAP-1G18	CCIS0011	04-01-2015	03-31-2016
6	Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	04-01-2015	03-31-2016
7	Horn Antenna	ETS-LINDGREN	3160	GTS217	04-01-2015	03-31-2016
8	Spectrum analyzer 9k-30GHz	Rohde & Schwarz	FSP30	CCIS0023	03-28-2015	03-28-2016
9	EMI Test Receiver	Rohde & Schwarz	ESRP7	CCIS0167	03-28-2015	03-28-2016
10	Loop antenna	Laplace instrument	RF300	EMC0701	04-01-2015	03-31-2016

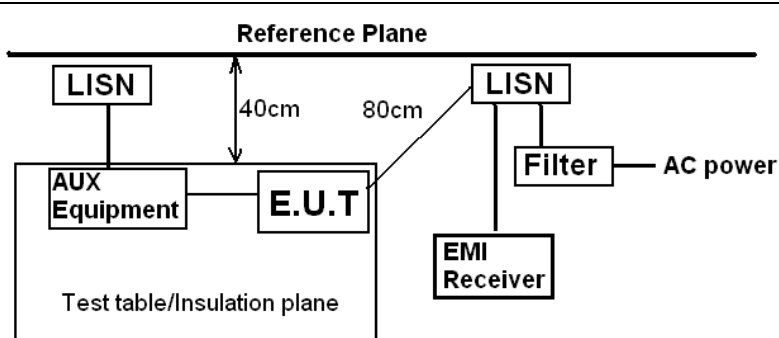
Conducted Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
1	Shielding Room	ZhongShuo Electron	11.0(L)x4.0(W)x3.0(H)	CCIS0061	08-23-2014	08-22-2017
2	EMI Test Receiver	Rohde & Schwarz	ESCI	CCIS0002	03-28-2015	03-28-2016
3	LISN	CHASE	MN2050D	CCIS0074	03-28-2015	03-28-2016
4	Coaxial Cable	CCIS	N/A	CCIS0086	04-01-2015	03-31-2016
5	EMI Test Software	AUDIX	E3	N/A	N/A	N/A

6 Test results and Measurement Data

6.1 Antenna requirement:

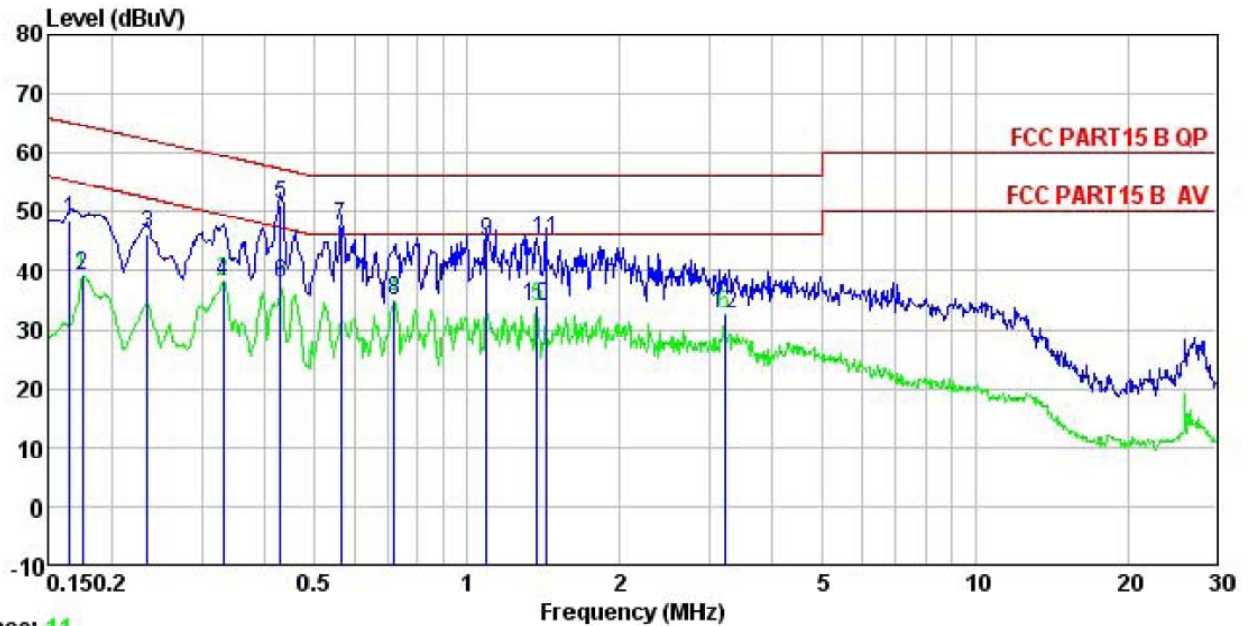
Standard requirement:	FCC Part 15 C Section 15.203 /247(c)
<p>15.203 requirement: <i>An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.</i></p> <p>15.247(c) (1)(i) requirement: <i>(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.</i></p>	
E.U.T Antenna:	
<p><i>The WiFi antenna is an internal antenna which cannot replace by end-user, the best case gain of the antenna is -1.43 dBi.</i></p>	
	

6.2 Conducted Emission

Test Requirement:	FCC Part 15 C Section 15.207		
Test Method:	ANSI C63.4: 2009		
Test Frequency Range:	150 kHz to 30 MHz		
Class / Severity:	Class B		
Receiver setup:	RBW=9 kHz, VBW=30 kHz		
Limit:	Frequency range (MHz)	Limit (dBuV)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
	* Decreases with the logarithm of the frequency.		
Test procedure	<ol style="list-style-type: none"> The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.), which provides a 50ohm/50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2009 on conducted measurement. 		
Test setup:	 <p>Remark E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m</p>		
Test Uncertainty:	±3.28 dB		
Test Instruments:	Refer to section 5.6 for details		
Test mode:	Refer to section 5.3 for details		
Test results:	Passed		

Measurement Data

Neutral:

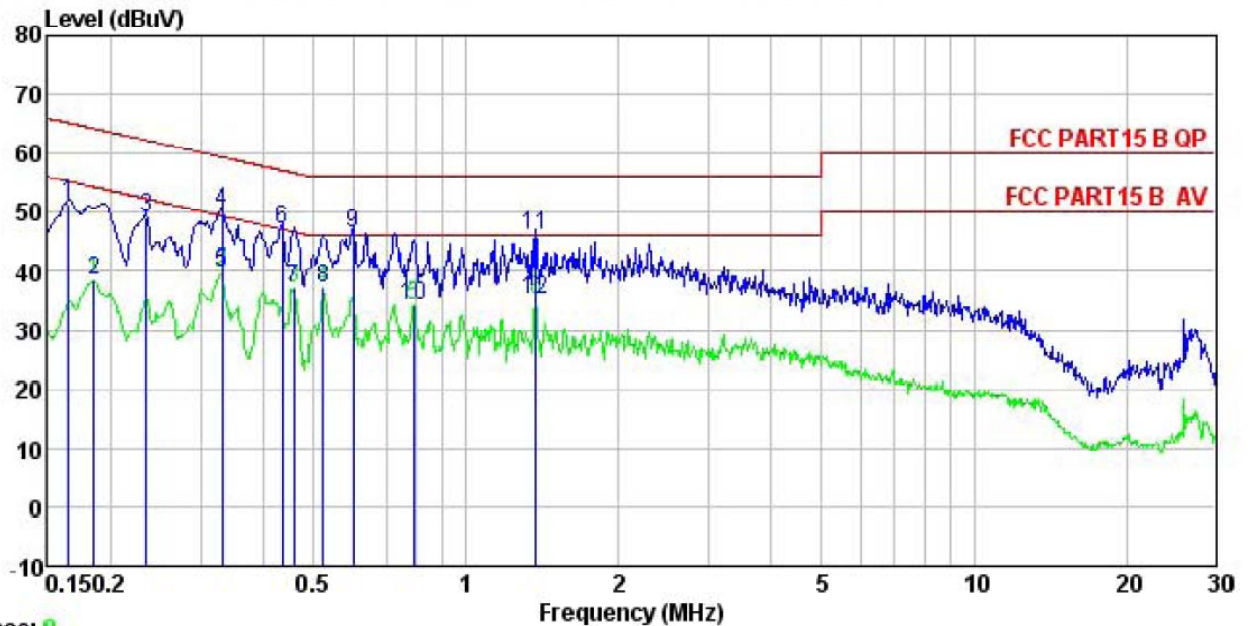


Trace: 11

Site : CCIS Shielding Room
 Condition : FCC PART15 B QP LISN NEUTRAL
 EUT : Mobile phone
 Model : G0779
 Test Mode : WIFI mode
 Power Rating : AC 120V/60Hz
 Environment : Temp: 23 °C Humi:56% Atmos:101KPa
 Test Engineer: Viki
 Remark :

	Freq	Read	LISN	Cable	Level	Limit	Over	
	MHz	Level	Factor	Loss	dBuV	Line	Limit	Remark
		dBuV	dB	dB		dBuV	dB	
1	0.165	37.53	0.17	10.77	48.47	65.21	-16.74	QP
2	0.175	28.28	0.17	10.77	39.22	54.72	-15.50	Average
3	0.235	35.23	0.16	10.75	46.14	62.26	-16.12	QP
4	0.330	27.12	0.16	10.73	38.01	49.44	-11.43	Average
5	0.431	40.16	0.16	10.73	51.05	57.24	-6.19	QP
6	0.431	27.01	0.16	10.73	37.90	47.24	-9.34	Average
7	0.564	36.35	0.17	10.77	47.29	56.00	-8.71	QP
8	0.720	23.98	0.17	10.78	34.93	46.00	-11.07	Average
9	1.094	33.67	0.18	10.88	44.73	56.00	-11.27	QP
10	1.374	22.71	0.19	10.91	33.81	46.00	-12.19	Average
11	1.433	34.06	0.19	10.92	45.17	56.00	-10.83	QP
12	3.207	21.45	0.23	10.91	32.59	46.00	-13.41	Average

Line:



Trace: 9

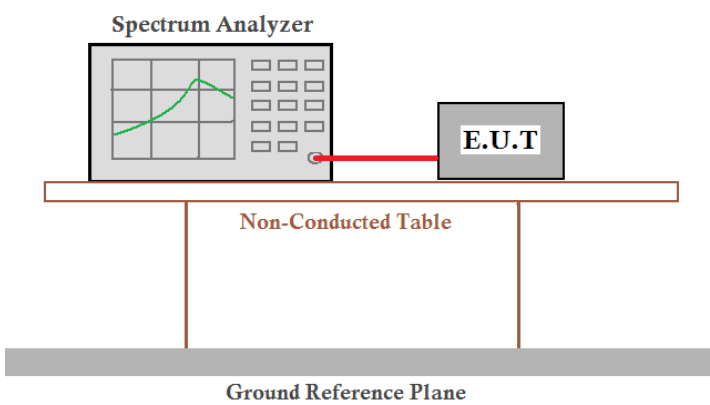
Site : CCIS Shielding Room
 Condition : FCC PART15 B QP LISN LINE
 EUT : Mobile phone
 Model : G0779
 Test Mode : WIFI mode
 Power Rating : AC 120V/60Hz
 Environment : Temp: 23 °C Humi:56% Atmos:101KPa
 Test Engineer: Viki
 Remark :

	Read	LISN	Cable		Limit	Over		
Freq	Level	Factor	Loss	Level	Line	Limit	Remark	
-----	-----	-----	-----	-----	-----	-----	-----	-----
MHz	dBuV	dB	dB	dBuV	dBuV	dB		
1	0.165	40.41	0.26	10.77	51.44	65.21	-13.77	QP
2	0.185	27.49	0.26	10.77	38.52	54.24	-15.72	Average
3	0.235	38.11	0.26	10.75	49.12	62.26	-13.14	QP
4	0.330	38.96	0.26	10.73	49.95	59.44	-9.49	QP
5	0.330	28.67	0.26	10.73	39.66	49.44	-9.78	Average
6	0.435	36.11	0.26	10.73	47.10	57.15	-10.05	QP
7	0.459	26.24	0.27	10.75	37.26	46.71	-9.45	Average
8	0.524	25.97	0.27	10.76	37.00	46.00	-9.00	Average
9	0.601	35.56	0.27	10.77	46.60	56.00	-9.40	QP
10	0.792	23.17	0.28	10.81	34.26	46.00	-11.74	Average
11	1.374	34.79	0.30	10.91	46.00	56.00	-10.00	QP
12	1.374	23.97	0.30	10.91	35.18	46.00	-10.82	Average

Notes:

1. An initial pre-scan was performed on the live and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level =Receiver Read level + LISN Factor + Cable Loss

6.3 Conducted Output Power

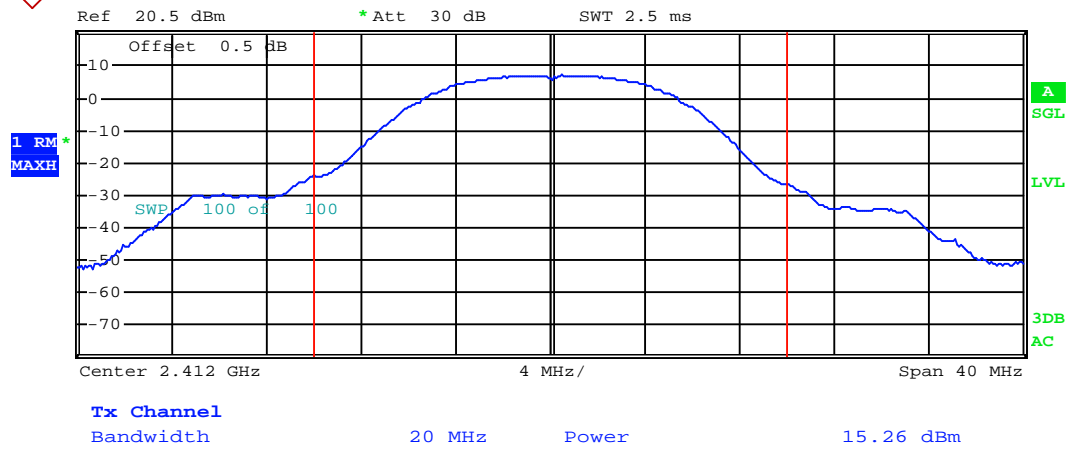
Test Requirement:	FCC Part 15 C Section 15.247 (b)(3)
Test Method:	ANSI C63.10:2009 and KDB558074v03r03 section 9.2.2
Limit:	30dBm
Test setup:	
Test Instruments:	Refer to section 5.6 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data

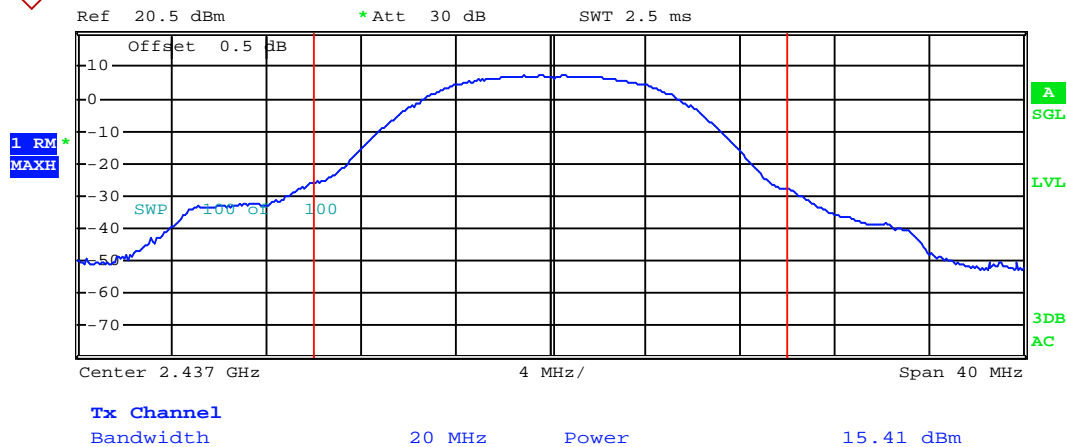
Test CH	Maximum Conducted Output Power (dBm)				Limit(dBm)	Result
	802.11b	802.11g	802.11n(H20)	802.11n(H40)		
Lowest	15.26	12.46	12.46	10.50	30.00	Pass
Middle	15.41	13.83	13.82	12.77		
Highest	15.71	13.01	13.04	10.76		

Test plot as follows:

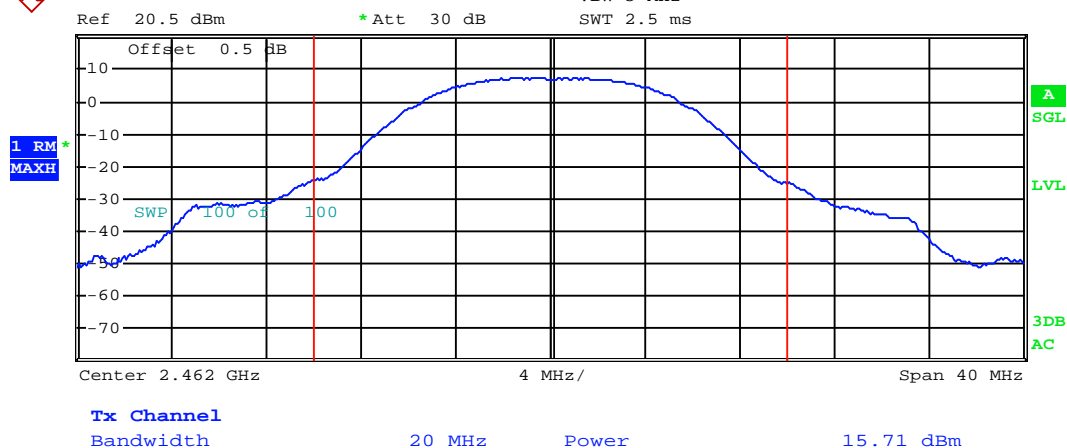
Test mode: 802.11b



Lowest channel

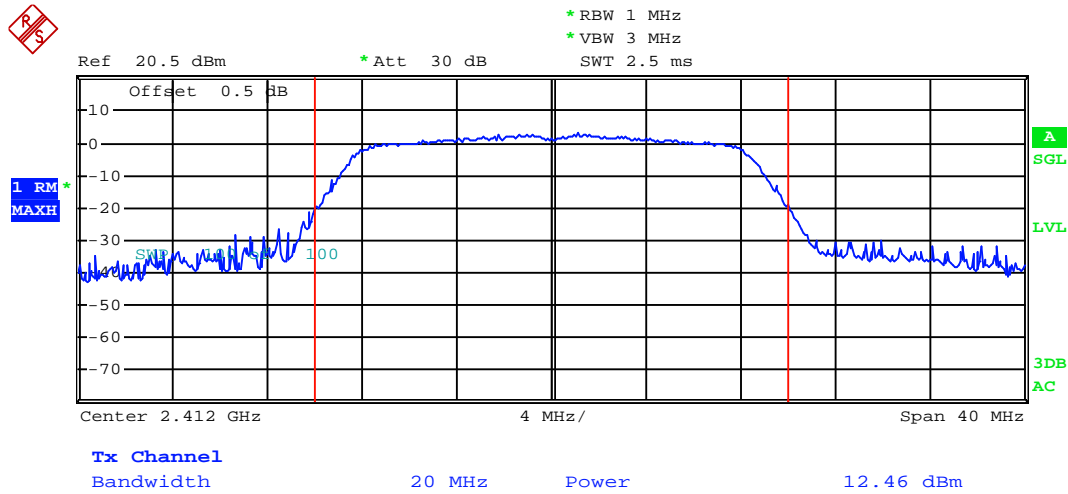


Middle channel

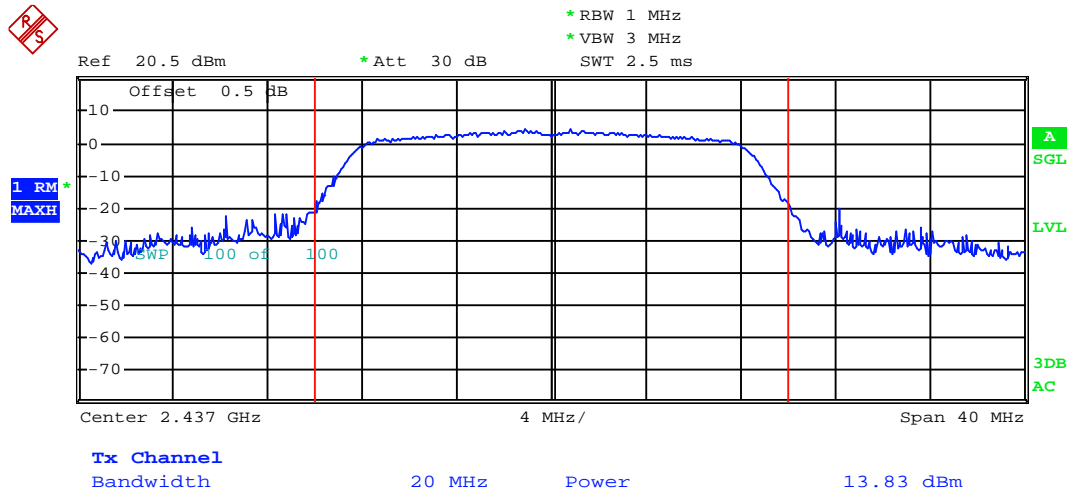


Highest channel

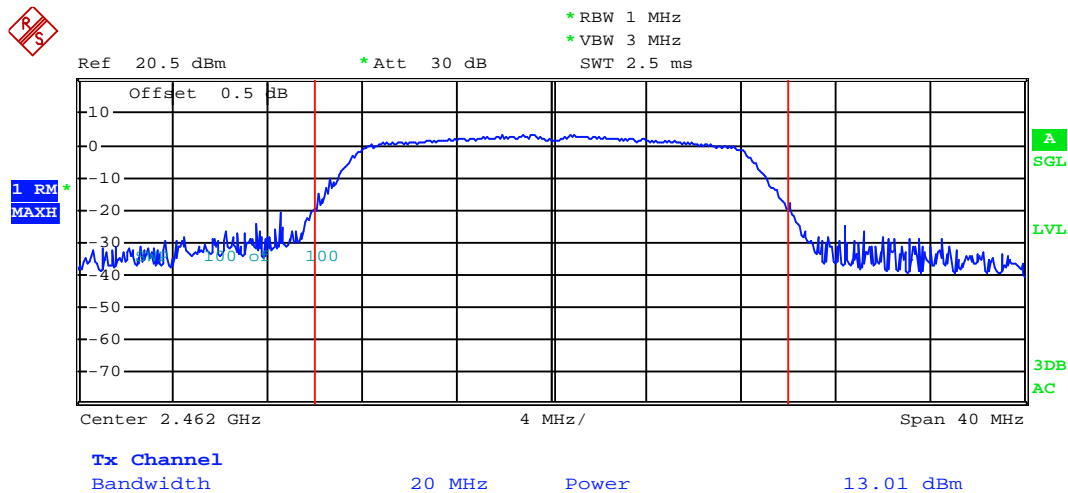
Test mode: 802.11g



Lowest channel

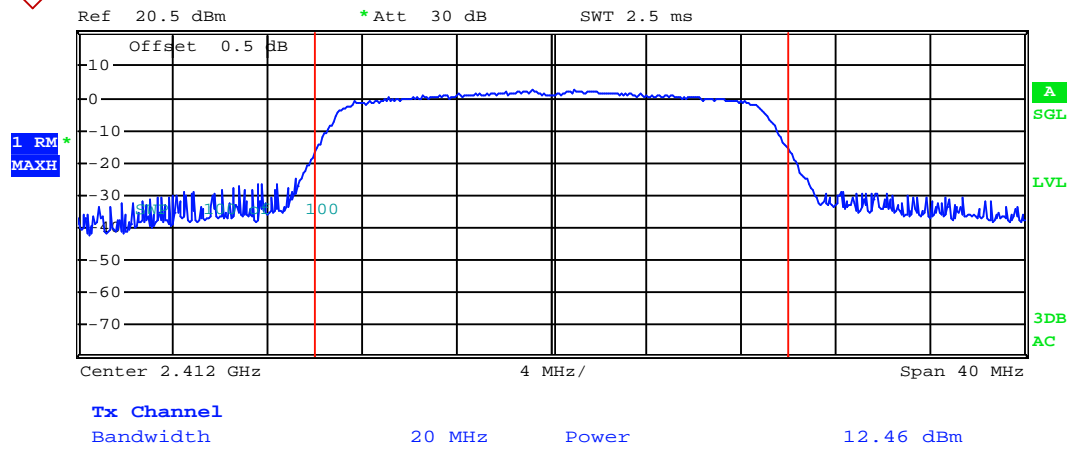


Middle channel

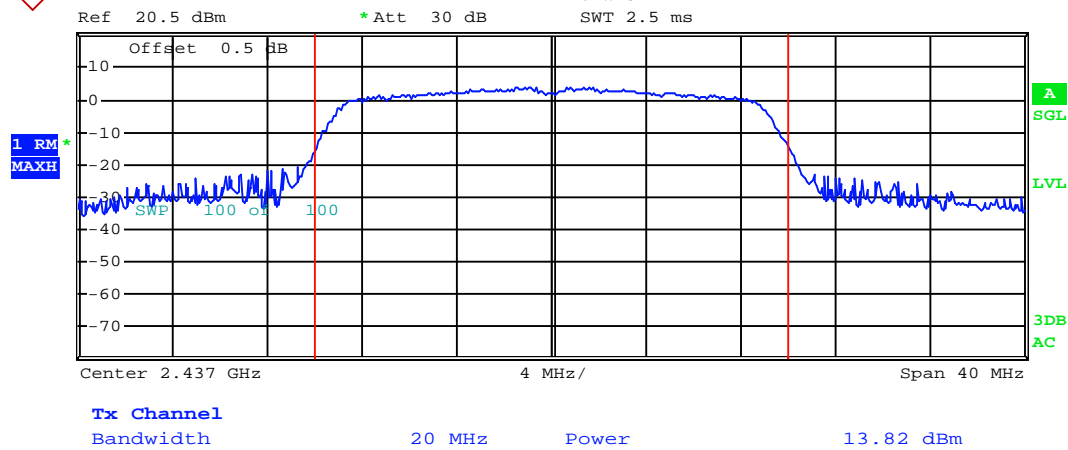


Highest channel

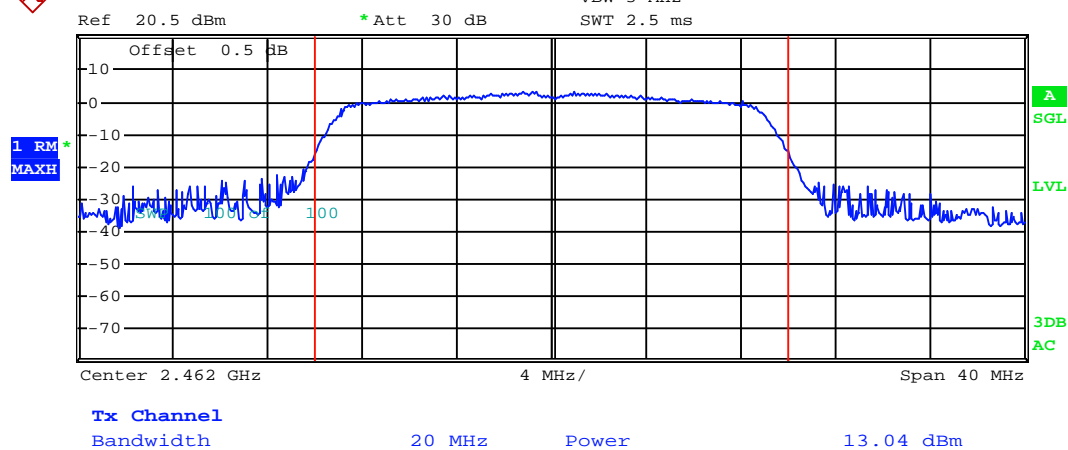
Test mode: 802.11n(H20)



Lowest channel

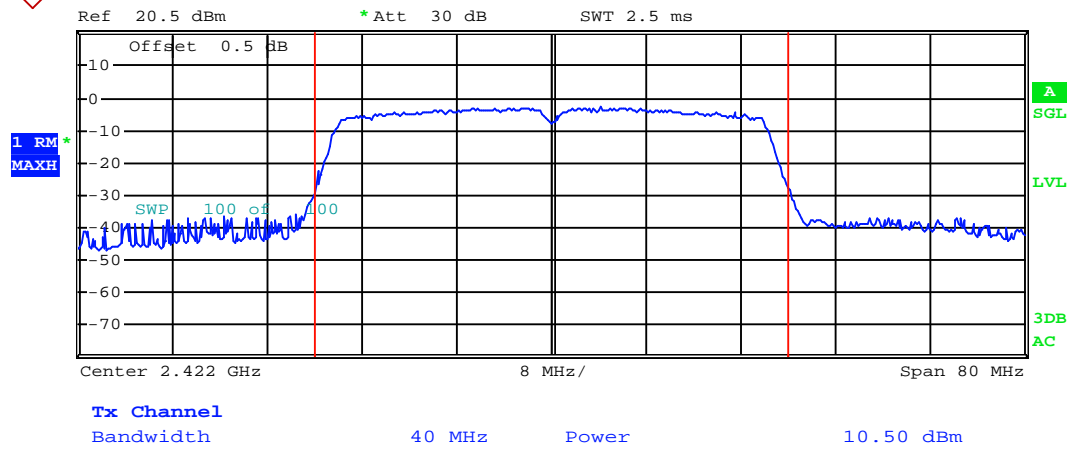


Middle channel

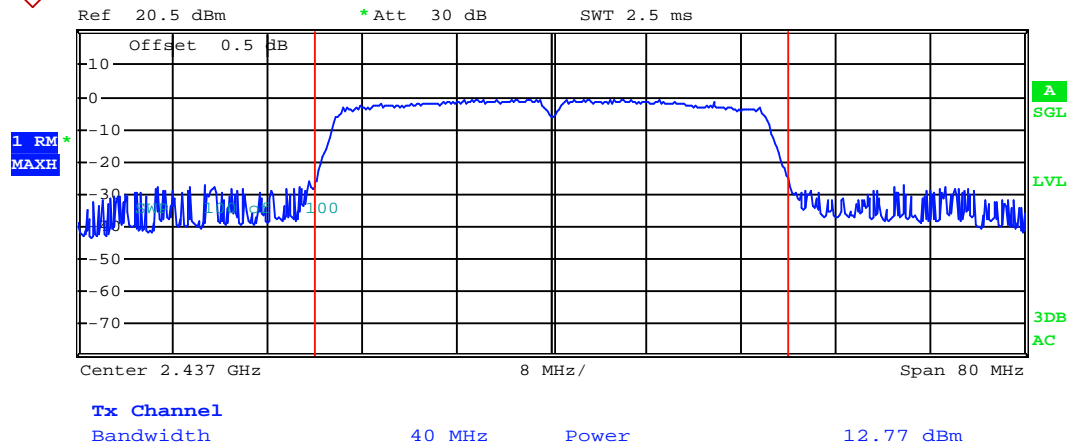


Highest channel

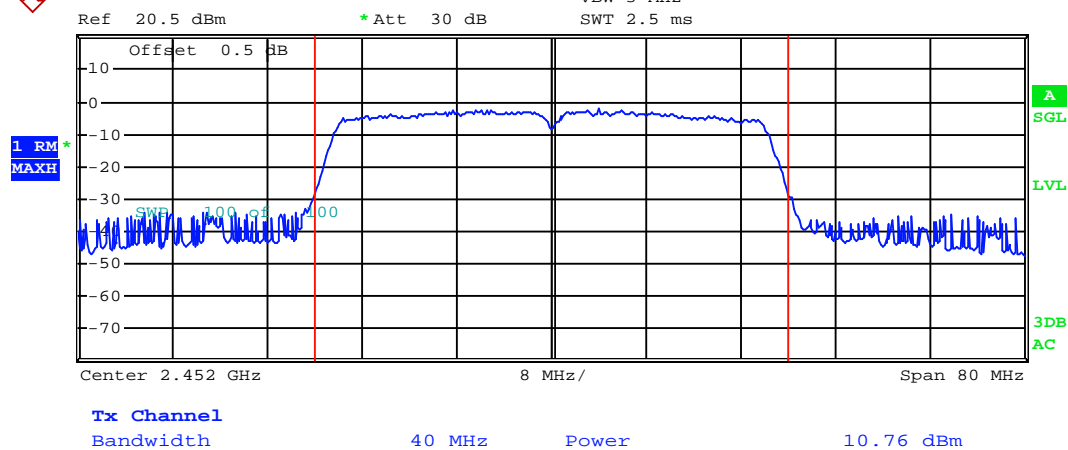
Test mode: 802.11n(H40)



Lowest channel

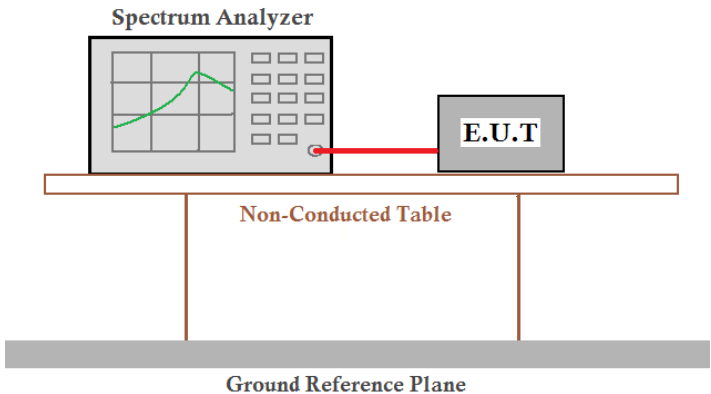


Middle channel



Highest channel

6.4 Occupy Bandwidth

Test Requirement:	FCC Part 15 C Section 15.247 (a)(2)
Test Method:	ANSI C63.10:2009 and KDB558074v03r03 section 8.1
Limit:	>500kHz
Test setup:	
Test Instruments:	Refer to section 5.6 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data

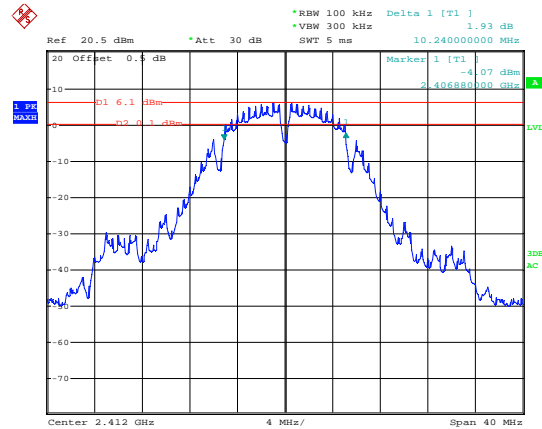
Test CH	6dB Emission Bandwidth (MHz)				Limit(kHz)	Result
	802.11b	802.11g	802.11n(H20)	802.11n(H40)		
Lowest	10.24	15.36	15.52	35.52	>500	Pass
Middle	10.24	15.28	15.28	35.52		
Highest	10.24	15.96	16.40	35.52		

Test CH	99% Occupy Bandwidth (MHz)				Limit(kHz)	Result
	802.11b	802.11g	802.11n(H20)	802.11n(H40)		
Lowest	12.88	16.48	17.60	35.84	N/A	N/A
Middle	12.88	16.48	17.60	35.84		
Highest	12.96	16.48	17.60	35.84		

Test plot as follows:

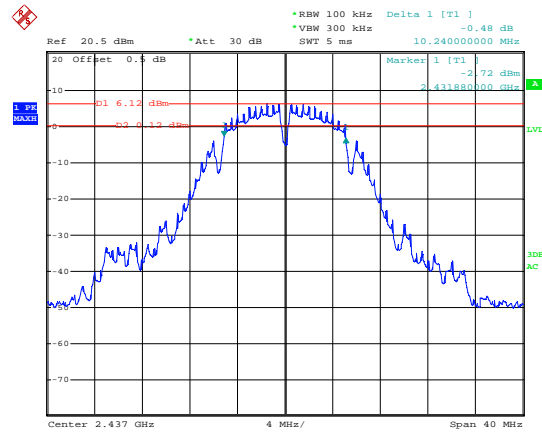
6dB EBW

Test mode: 802.11b



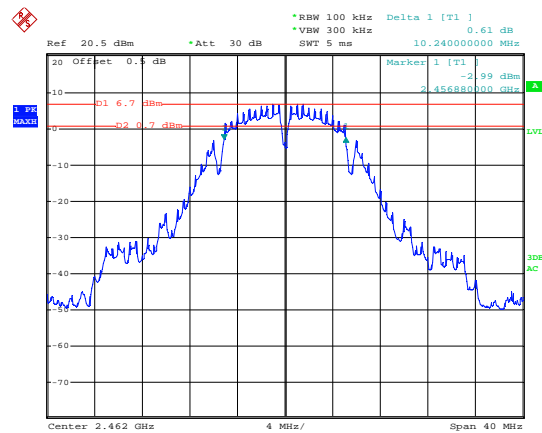
Date: 29.FEB.2016 14:06:14

Lowest channel



Date: 29.FEB.2016 14:05:00

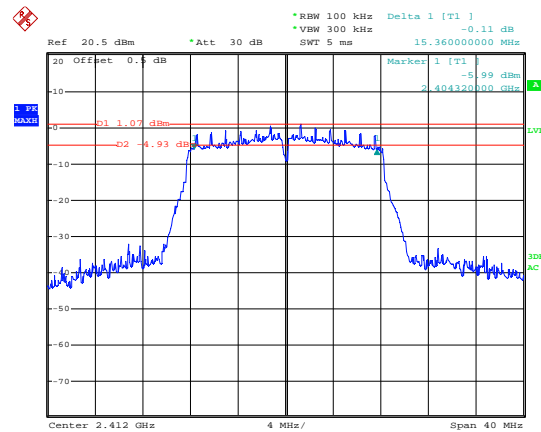
Middle channel



Date: 29.FEB.2016 13:57:19

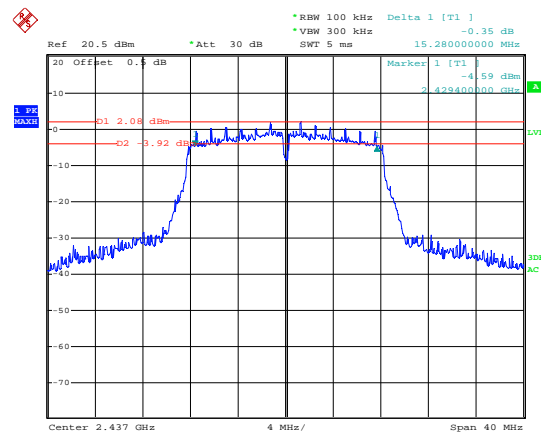
Highest channel

Test mode: 802.11g



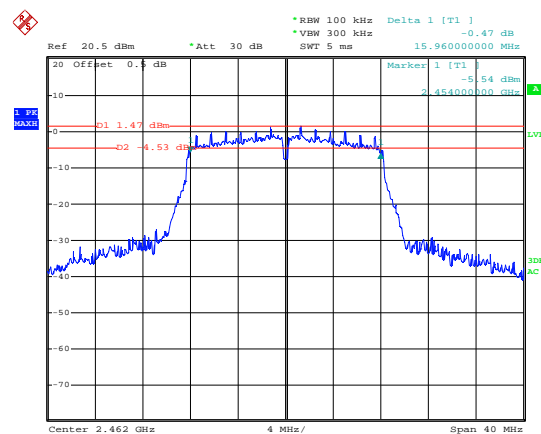
Date: 29.FEB.2016 14:07:32

Lowest channel



Date: 29.FEB.2016 14:03:56

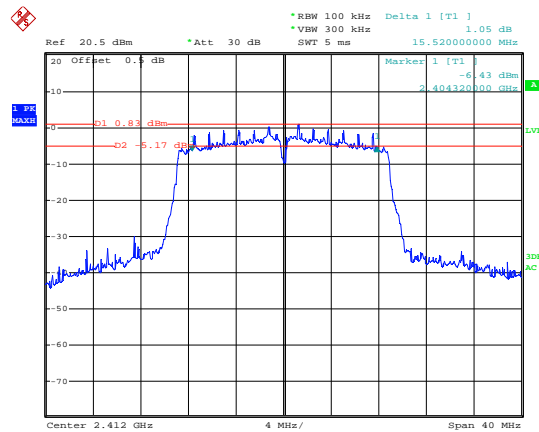
Middle channel



Date: 29.FEB.2016 13:56:17

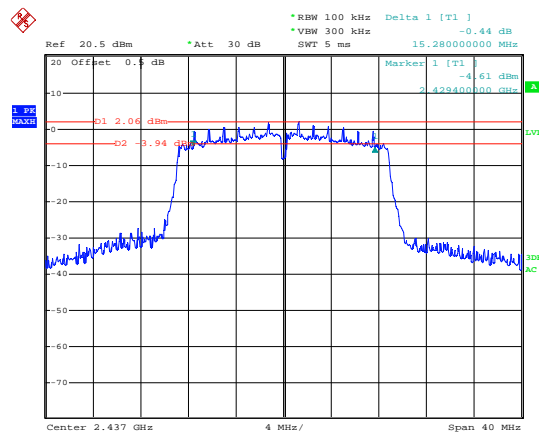
Highest channel

Test mode: 802.11n(H20)



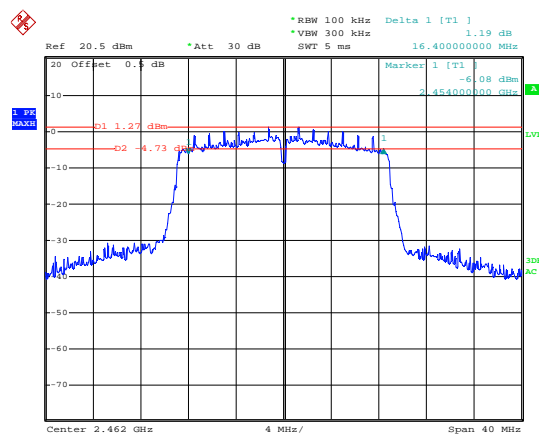
Date: 29.FEB.2016 14:09:05

Lowest channel



Date: 29.FEB.2016 14:02:26

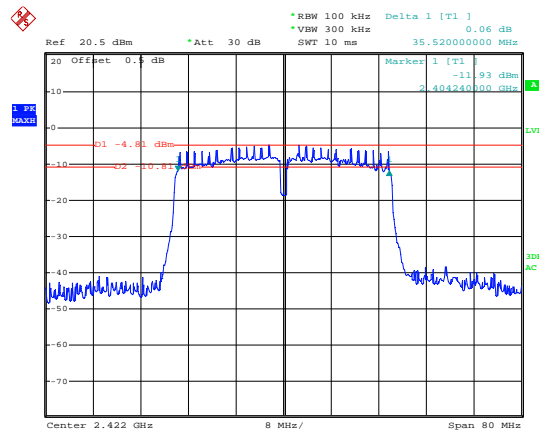
Middle channel



Date: 29.FEB.2016 14:00:41

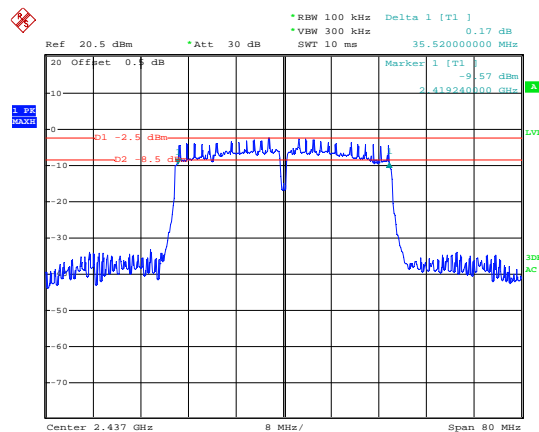
Highest channel

Test mode: 802.11n(H40)



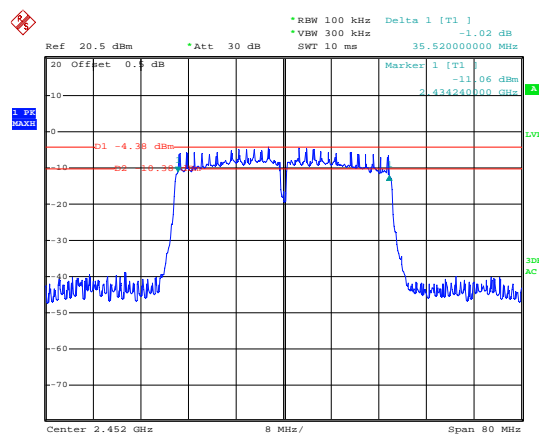
Date: 29.FEB.2016 14:10:44

Lowest channel



Date: 29.FEB.2016 14:12:13

Middle channel

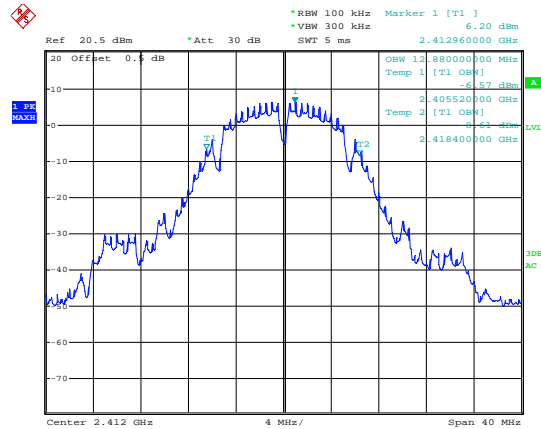


Date: 29.FEB.2016 14:13:59

Highest channel

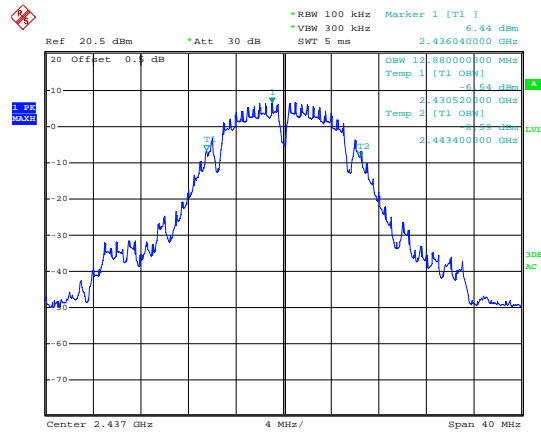
99% OBW

Test mode: 802.11b



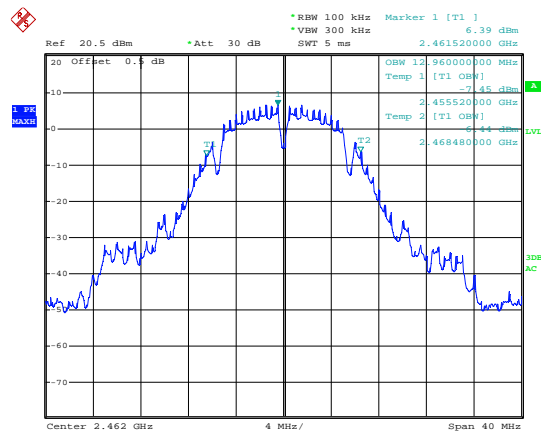
Date: 29.FEB.2016 13:48:37

Lowest channel



Date: 29.FEB.2016 13:49:40

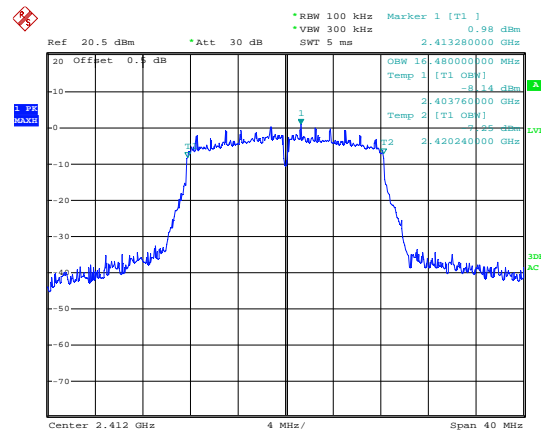
Middle channel



Date: 29.FEB.2016 13:50:05

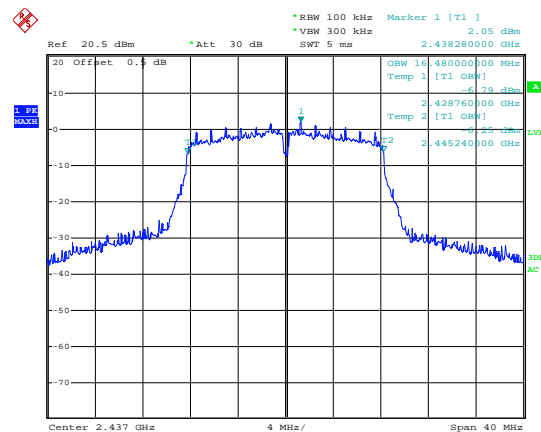
Highest channel

Test mode: 802.11g



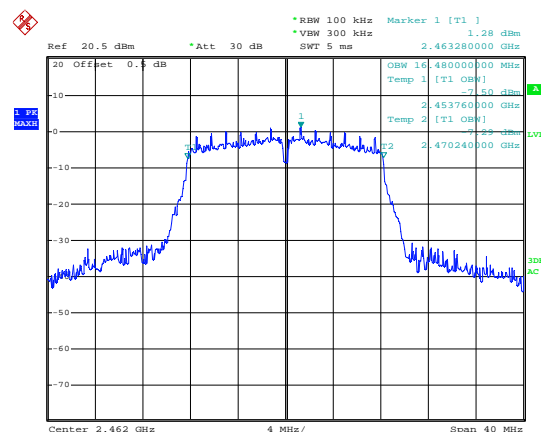
Date: 29.FEB.2016 13:47:53

Lowest channel



Date: 29.FEB.2016 13:47:29

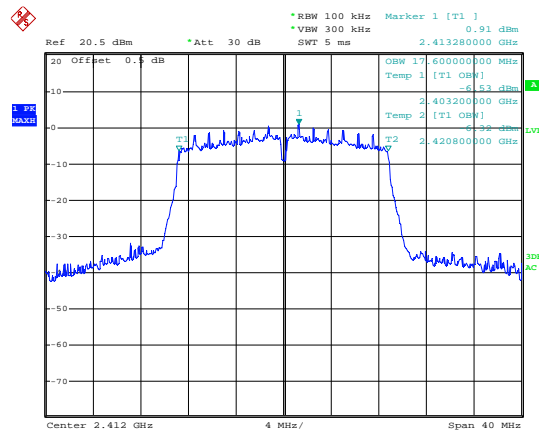
Middle channel



Date: 29.FEB.2016 13:40:52

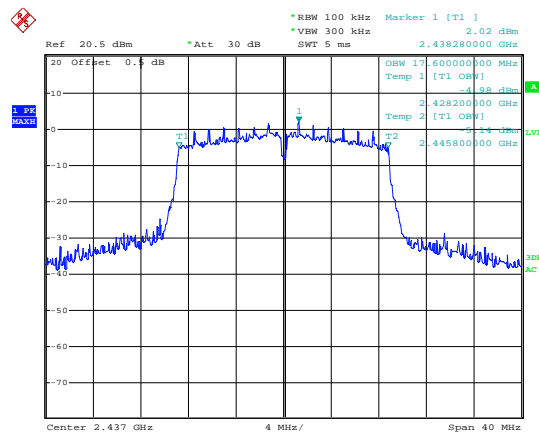
Highest channel

Test mode: 802.11n(H20)



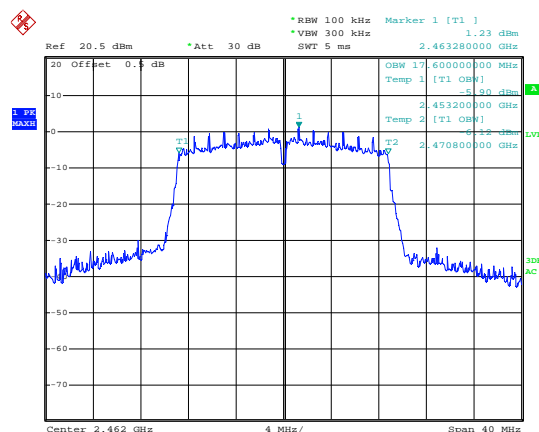
Date: 29.FEB.2016 13:39:11

Lowest channel



Date: 29.FEB.2016 13:39:50

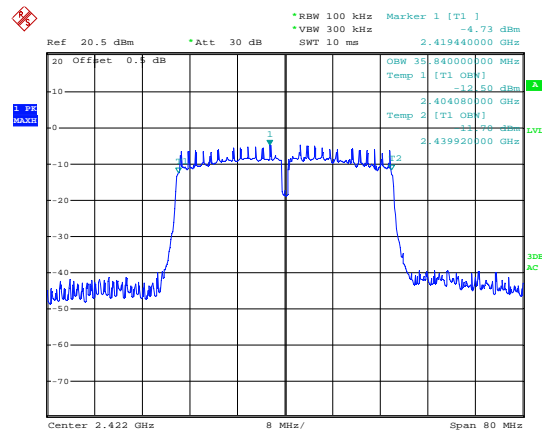
Middle channel



Date: 29.FEB.2016 13:40:13

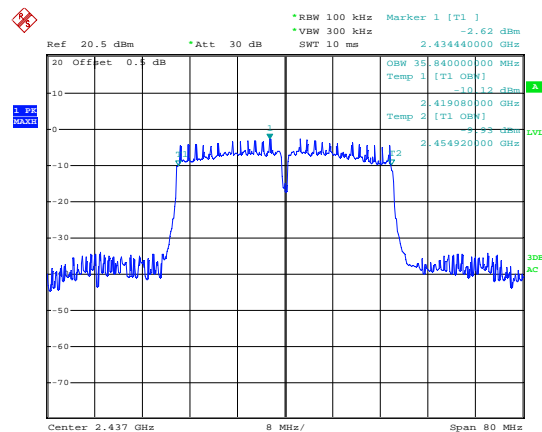
Highest channel

Test mode: 802.11n(H40)



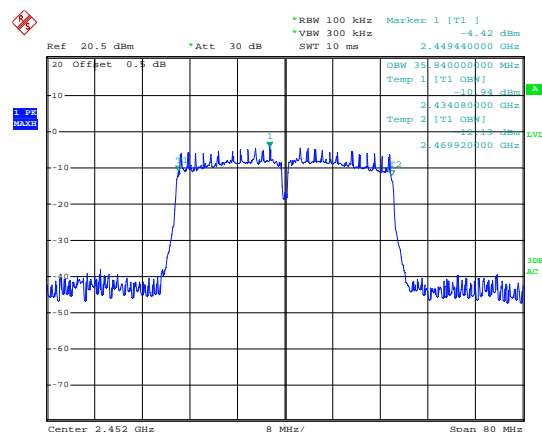
Date: 29.FEB.2016 13:35:13

Lowest channel



Date: 29.FEB.2016 13:34:49

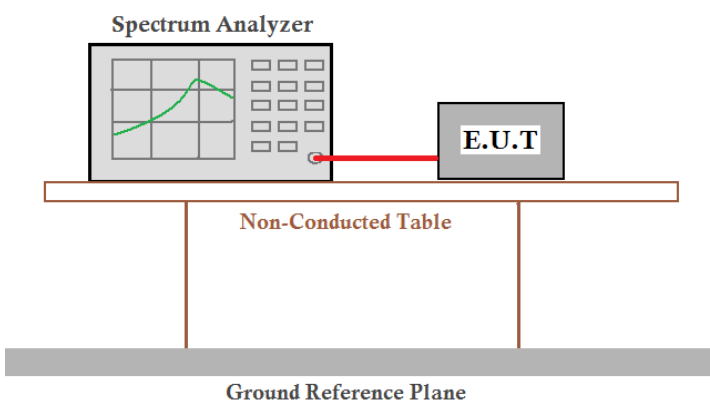
Middle channel



Date: 29.FEB.2016 13:34:24

Highest channel

6.5 Power Spectral Density

Test Requirement:	FCC Part 15 C Section 15.247 (e)
Test Method:	ANSI C63.10:2009 and KDB558074v03r03 section 10.2
Limit:	8dBm
Test setup:	
Test Instruments:	Refer to section 5.6 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data

Test CH	Power Spectral Density (dBm)				Limit(dBm)	Result
	802.11b	802.11g	802.11n(H20)	802.11n(H40)		
Lowest	6.76	0.97	0.93	-4.63	8.00	Pass
Middle	6.25	1.98	1.75	-2.57		
Highest	6.48	1.13	1.21	-4.40		

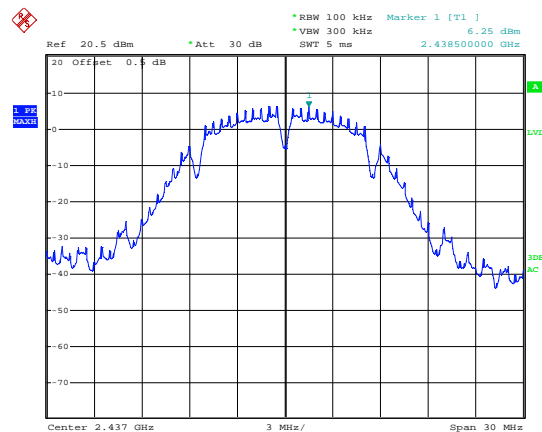
Test plot as follows:

Test mode: 802.11b



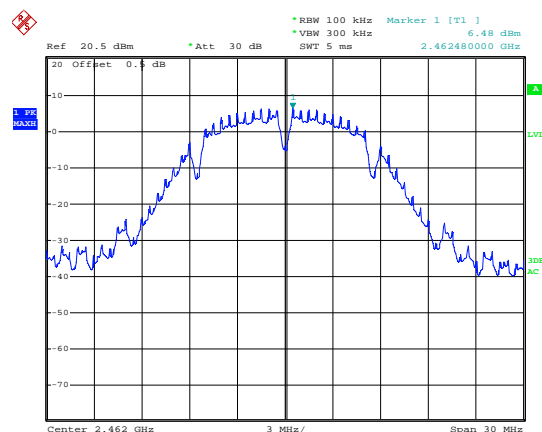
Date: 29.FEB.2016 13:28:12

Lowest channel



Date: 29.FEB.2016 13:28:36

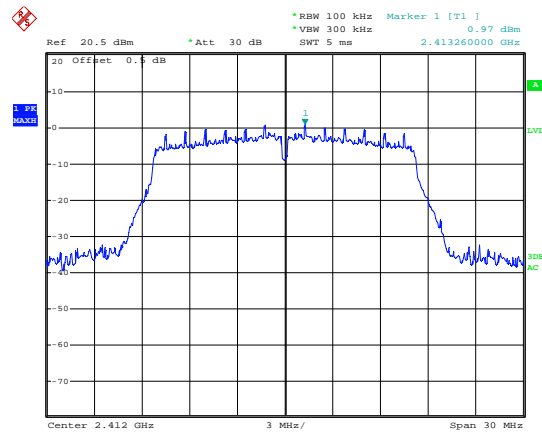
Middle channel



Date: 29.FEB.2016 13:28:58

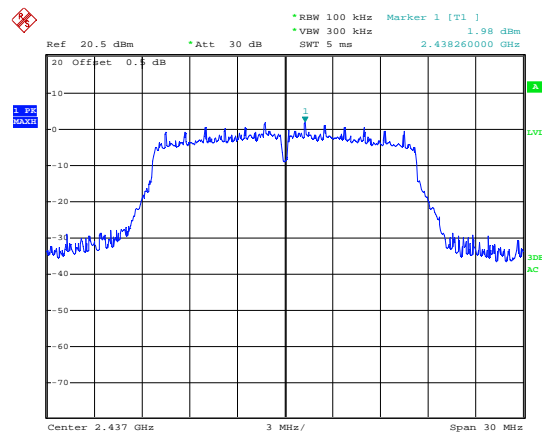
Highest channel

Test mode: 802.11g



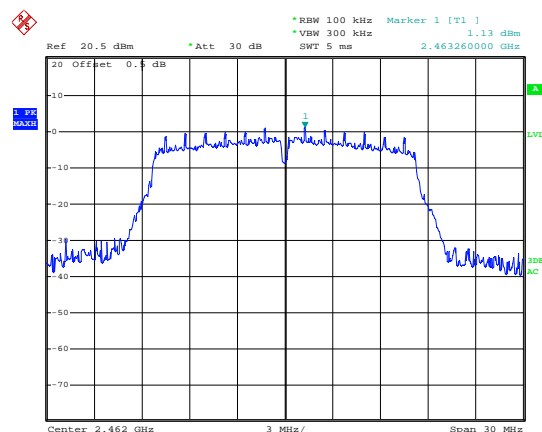
Date: 29.FEB.2016 13:30:48

Lowest channel



Date: 29.FEB.2016 13:29:46

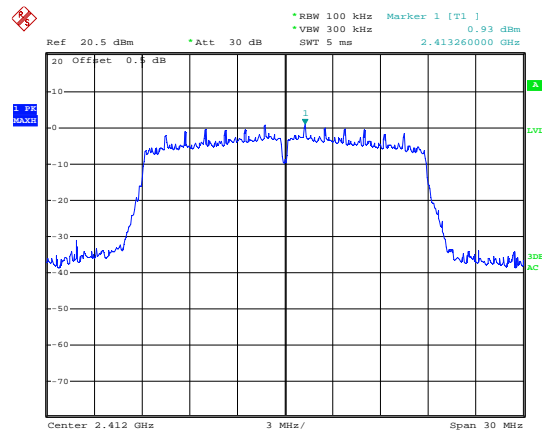
Middle channel



Date: 29.FEB.2016 13:29:23

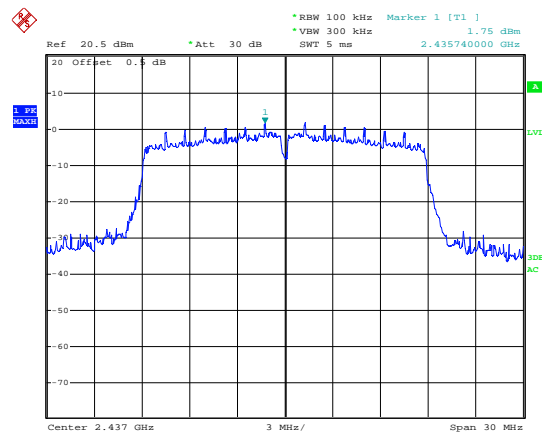
Highest channel

Test mode: 802.11n(H20)



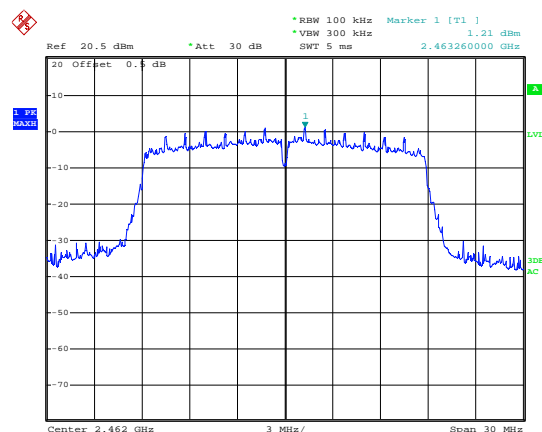
Date: 29.FEB.2016 13:31:27

Lowest channel



Date: 29.FEB.2016 13:31:49

Middle channel



Date: 29.FEB.2016 13:32:16

Highest channel