Bundesnetzagentur		CTC advanced member of RWTÜV group			
BNetzA-CAB-02/21-102		EPORT 1-4862/17-01-03			
Testi	ng laboratory	Applicant			
CTC advanced GmbH Untertuerkheimer Stras 66117 Saarbruecken / C Phone: + 49 681 5 99 Fax: + 49 681 5 99 Internet: http://www.ct e-mail: mail@ctcady	Germany 8 - 0 8 - 9075 <u>cadvanced.com</u> <u>ranced.com</u>	Ingenico Group 9 Avenue de la Gare Rovaltain 26958 Valence Cedex 9 / FRANCE Phone: -/- Fax: -/- Contact: Jean-Baptiste Palisse e-mail: jean-baptiste.palisse@ingenico.com Phone: +33 4 75 84 21 74			
according to DIN EN Deutsche Akkreditierun The accreditation is	(area of testing) is accredited ISO/IEC 17025 (2005) by the gsstelle GmbH (DAkkS) valid for the scope of testing the accreditation certificate with	Manufacturer Ingenico Group 9 Avenue de la Gare Rovaltain 26958 Valence Cedex 9 / FRANCE			
	Test sta	indard/s			
47 CFR Part 15	Title 47 of the Code of Federa devices	al Regulations; Chapter I; Part 15 - Radio frequency			
RSS - 247 Issue 2	Digital Transmission Systems Licence - Exempt Local Area	s (DTSs), Frequency Hopping Systems (FHSs) and Network (LE-LAN) Devices			
RSS - Gen Issue 4	General Requirements and In	Felecommunications Radio Standards Specifications - formation for the Certification of Radio Apparatus			
For further applied tests	standards please refer to section 3 of	this test report.			
	Test	Item			
Kind of test item:	Payment terminal				
Model name:	DESK3500 CL/ETH/MOD/WiFi				
FCC ID:	XKB-D3500CLWI				
IC:	2586D-D3500CLWI				
Fraguana	UNII bands: 5150 MHz to 5250 MHz ⁻ 5250 MH				
Frequency:	5 150 MHZ TO 5250 MHZ: 5250 MH				

 Frequency:
 5150 MHz to 5250 MHz; 5250 MHz to 5350 MHz; 5470 MHz to 5725 MHz; 5725 MHz to 5850 MHz;

 Technologytested:
 WLAN

 Antenna:
 Integrated antenna

 Power supply:
 110 V AC / 8 V DC by AC/DC mains adapter PSM24W-080L6

 Temperature range:
 0°C to +40°C

This test report is electronically signed and valid without handwritten signature. For verification of the electronic signatures, the public keys can be requested at the testing laboratory.

Test report authorized:

Mihail Dorongovskij Lab Manager Radio Communications & EMC

Test performed:

Marco Bertolino Lab Manager Radio Communications & EMC



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2 General information

2.1 Notes and disclaimer

The test results of this test report relate exclusively to the test item specified in this test report. CTC advanced GmbH does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item.

The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of CTC advanced GmbH.

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In no case this test report can be considered as a Letter of Approval.

This test report is electronically signed and valid without handwritten signature. For verification of the electronic signatures, the public keys can be requested at the testing laboratory.

2.2 Application details

Date of receipt of order:	2017-09-25
Date of receipt of test item:	2017-10-04
Start of test:	2017-10-04
End of test:	2017-11-25
Person(s) present during the test:	-/-

2.3 Test laboratories sub-contracted

None

3 Test standard/s and references

Test standard	Date	Description
47 CFR Part 15	-/-	Title 47 of the Code of Federal Regulations; Chapter I; Part 15 - Radio frequency devices
RSS - 247 Issue 2	February 2017	Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence - Exempt Local Area Network (LE- LAN) Devices
RSS - Gen Issue 4	November 2014	Spectrum Management and Telecommunications Radio Standards Specifications - General Requirements and Information for the Certification of Radio Apparatus

Guidance	Version	Description
UNII: KDB 789033 D02	v01r04	Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E
ANSI C63.4-2014	-/-	American national standard for methods of measurement of radio- noise emissions from low-voltage electrical and electronic
ANSI C63.10-2013	-/-	equipment in the range of 9 kHz to 40 GHz American national standard of procedures for compliance testing of unlicensed wireless devices





4 **Test environment**

Temperature	:	Tnom Tmax Tmin	+22 °C during room temperature tests No tests under extreme temperature conditions required. No tests under extreme temperature conditions required.
Relative humidity content			55 %
Barometric pressure	:		1021 hpa
Power supply	:	Vnom Vmax Vmin	110 V AC / 8 V DC by AC/DC mains adapter PSM24W-080L6 No tests under extreme voltage conditions required. No tests under extreme voltage conditions required.

5 **Test item**

5.1 **General description**

Kind of test item	:	Payment terminal			
Type identification	:	DESK3500 CL/ETH/MOD/WiFi			
HMN	:	-/-			
PMN	:	Desk/3500			
HVIN	:	Desk/3500 CL/Eth/Mod/WiFi			
FVIN	:	-/-			
S/N serial number	:	Radiated unit: 161937313251060601110728 Conducted unit: 161937313301064301110726 Photo unit: 161937313251060601110728			
HW hardware status	: 01				
SW software status	:	OS_038002 HTB_0084			
Frequency band	:	UNII bands: 5150 MHz to 5250 MHz; 5250 MHz to 5350 MHz; 5470 MHz to 5725 MHz; 5725 MHz to 5850 MHz			
Type of radio transmission Use of frequency spectrum	•	OFDM			
Type of modulation	:	(D)BPSK, (D)QPSK, 16 – QAM, 64 – QAM			
Number of channels	20 MHz: 24				
Antenna	:	Integrated antenna			
Power supply	:	110 V AC / 8 V DC by AC/DC mains adapter PSM24W-080L6			
Temperature range	:	0°C to +40°C			

5.2 Additional information

The content of the following annexes is defined in the QA. It may be that not all of the listed annexes are necessary for this report, thus some values in between may be missing.

Test setup- and EUT-photos are included in test report:

1-4862/17-01-01_AnnexA 1-4862/17-01-01_AnnexB 1-4862/17-01-01_AnnexD



6 Description of the test setup

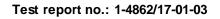
Typically, the calibrations of the test apparatus are commissioned to and performed by an accredited calibration laboratory. The calibration intervals are determined in accordance with the DIN EN ISO/IEC 17025. In addition to the external calibrations, the laboratory executes comparison measurements with other calibrated test systems or effective verifications. Weekly chamber inspections and range calibrations are performed. Where possible, RF generating and signaling equipment as well as measuring receivers and analyzers are connected to an external high-precision 10 MHz reference (GPS-based or rubidium frequency standard).

In order to simplify the identification of the equipment used at some special tests, some items of test equipment and ancillaries can be provided with an identifier or number in the equipment list below (Lab/Item).

Agenda: Kind of Calibration

- k calibration / calibrated
- ne not required (k, ev, izw, zw not required)
- ev periodic self verification
- Ve long-term stability recognized
- vlkl! Attention: extended calibration interval
- NK! Attention: not calibrated

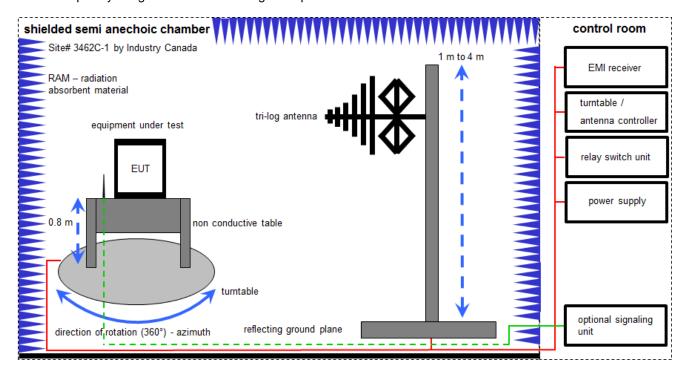
- EK limited calibration
- zw cyclical maintenance (external cyclical maintenance)
- izw internal cyclical maintenance
- g blocked for accredited testing
- *) next calibration ordered / currently in progress





6.1 Shielded semi anechoic chamber

The radiated measurements are performed in vertical and horizontal plane in the frequency range from 30 MHz to 1 GHz in semi-anechoic chambers. The EUT is positioned on a non-conductive support with a height of 0.80 m above a conductive ground plane that covers the whole chamber. The receiving antennas are conform to specifications ANSI C63. These antennas can be moved over the height range between 1.0 m and 4.0 m in order to search for maximum field strength emitted from EUT. The measurement distances between EUT and receiving antennas are indicated in the test setups for the various frequency ranges. For each measurement, the EUT is rotated in all three axes until the maximum field strength is received. The wanted and unwanted emissions are received by spectrum analyzers where the detector modes and resolution bandwidths over various frequency ranges are set according to requirement ANSI C63.



Measurement distance: tri-log antenna 10 meter

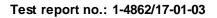
FS = UR + CL + AF

(FS-field strength; UR-voltage at the receiver; CL-loss of the cable; AF-antenna factor)

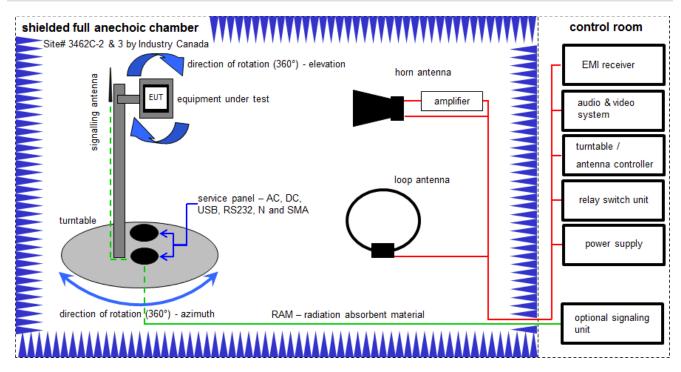
Example calculation:

FS [dBµV/m] = 12.35 [dBµV/m] + 1.90 [dB] + 16.80 [dB/m] = 31.05 [dBµV/m] (35.69 µV/m)

No.	Lab / Item	Equipment	Туре	Manufacturer	Serial No.	INV. No.	Kind of Calibration	Last Calibration	Next Calibration
1	A	Switch-Unit	3488A	HP	2719A14505	300000368	ev	-/-	-/-
2	A	Meßkabine 1	HF-Absorberhalle	MWB AG 300023		300000551	ne	-/-	-/-
3	A	EMI Test Receiver	ESCI 3	R&S	100083	300003312	k	01.02.2017	31.01.2018
4	A	Analy zer-Ref erence- Sy stem (Harmonics and Flicker)	ARS 16/1	SPS	A3509 07/0 0205	300003314	Ve	-/-	-/-
5	A	Antenna Tower	Model 2175	ETS-Lindgren	64762	300003745	izw	-/-	-/-
6	A	Positioning Controller	Model 2090	ETS-Lindgren	64672	300003746	izw	-/-	-/-
7	A	Turntable Interface- Box	Model 105637	ETS-Lindgren	44583	300003747	izw	-/-	-/-
8	A	TRILOG Broadband Test-Antenna 30 MHz - 3 GHz	VULB9163	Schwarzbeck	295	300003787	k	25.04.2016	25.04.2018



6.2 Shielded fully anechoic chamber



Measurement distance: horn antenna 3 meter; loop antenna 3 meter / 1 meter

FS = UR + CA + AF

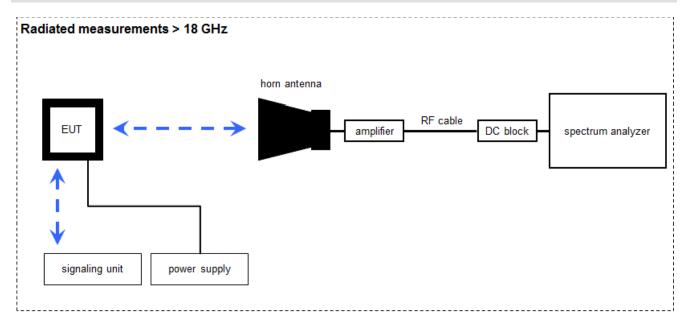
(FS-field strength; UR-voltage at the receiver; CA-loss of the signal path; AF-antenna factor)

Example calculation:

FS $[dB\mu V/m] = 40.0 \ [dB\mu V/m] + (-35.8) \ [dB] + 32.9 \ [dB/m] = 37.1 \ [dB\mu V/m] \ (71.61 \ \mu V/m)$

No.	Lab / Item	Equipment	Туре	Manufacturer	Serial No.	INV. No.	Kind of Calibration	Last Calibration	Next Calibration
1	А	Active Loop Antenna 9 kHz to 30 MHz	6502	EMCO	2210	300001015	k	07.07.2017	06.07.2019
2	A, B, C	Anechoic chamber	FAC 3/5m	MWB / TDK	87400/02	300000996	ev	-/-	-/-
3	B, C	Double-Ridged Waveguide Horn Antenna 1-18.0GHz	3115	EMCO	9107-3697	300001605	v IKI!	14.02.2017	13.02.2019
4	A, B, C	Switch / Control Unit	3488A	HP	*	300000199	ne	-/-	-/-
5	A, B, C	Variable isolating transformer	MPL IEC625 Bus Variable isolating transformer	Erfi	91350	300001155	ne	-/-	-/-
6	В	Band Reject filter	WRCG2400/2483- 2375/2505-50/10SS	Wainwright	11	300003351	ev	-/-	-/-
7	A, B, C	EMI Test Receiver 20Hz- 26,5GHz	ESU26	R&S	100037	300003555	k	31.01.2017	30.01.2018
8	В	Highpass Filter	WHK1.1/15G-10SS	Wainwright	3	300003255	ev	-/-	-/-
9	В	Highpass Filter	WHKX7.0/18G-8SS	Wainwright	19	300003790	ne	-/-	-/-
10	В	Broadband Amplifier 0.5-18 GHz	CBLU5184540	CERNEX	22049	300004481	ev	-/-	-/-
11	A, B, C	4U RF Switch Platf orm	L4491A	Agilent Technologies	MY 50000037	300004509	ne	-/-	-/-
12	A, B, C	NEXIO EMV- Software	BAT EMC V3.16.0.49	EMCO	-/-	300004682	ne	-/-	-/-
13	A, B, C	PC	ExOne	F+W	-/-	300004703	ne	-/-	-/-

6.3 Radiated measurements > 18 GHz



Measurement distance: horn antenna 50 cm

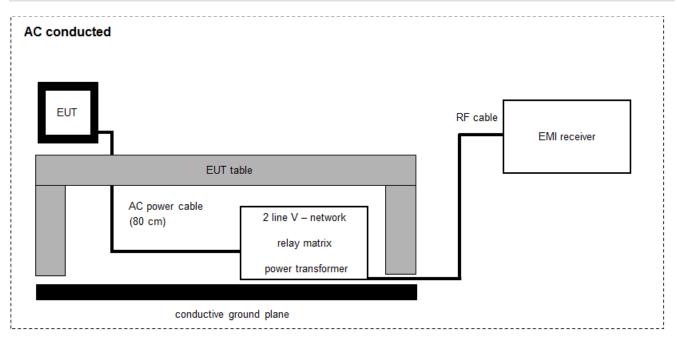
FS = UR + CA + AF

(FS-field strength; UR-voltage at the receiver; CA-loss signal path & distance correction; AF-antenna factor)

<u>Example calculation:</u> FS [dBµV/m] = 40.0 [dBµV/m] + (-60.1) [dB] + 36.74 [dB/m] = 16.64 [dBµV/m] (6.79 µV/m)

No.	Lab / Item	Equipment	Туре	Manufacturer	Serial No.	INV. No.	Kind of Calibration	Last Calibration	Next Calibration
1	A	Horn Antenna 18,0- 40,0 GHz	LHAF180	Microw.Devel	39180-103-022	300001748	k	22.05.2015	22.05.2018
2	A	Signal Analyzer 40 GHz	FSV40	R&S	101042	300004517	k	25.01.2017	24.01.2018
3	A	RF-Cable	ST18/SMAm/SMAm/ 48	Huber & Suhner	Batch no. 600918	400001182	ev	-/-	-/-
4	A	RF-Cable	ST18/SMAm/SMAm/ 48	Huber & Suhner	Batch no. 127377	400001183	ev	-/-	-/-
5	A	DC-Blocker 0.1-40 GHz	8141A	Inmet	-/-	400001185	ev	-/-	-/-
6	A	Amplifier 2-40 GHz	JS32-02004000-57- 5P	MITEQ	1777200	300004541	ev	-/-	-/-

6.4 AC conducted



FS = UR + CF + VC

(FS-field strength; UR-voltage at the receiver; CR-loss of the cable and filter; VC-correction factor of the ISN)

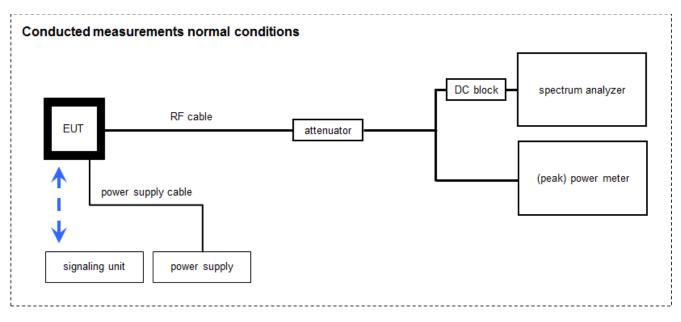
Example calculation:

FS [dBµV/m] = 37.62 [dBµV/m] + 9.90 [dB] + 0.23 [dB] = 47.75 [dBµV/m] (244.06 µV/m)

No.	Lab / Item	Equipment	Туре	Manufacturer	Serial No.	INV. No.	Kind of Calibration	Last Calibration	Next Calibration
1	А	Two-line V-Network (LISN) 9 kHz to 30 MHz	ESH3-Z5	R&S	893045/004	300000584	k	31.01.2017	30.01.2018
2	A	RF-Filter-section	85420E	HP	3427A00162	300002214	k	27.11.2006	-/-
3	A	AC- Spannungsquelle v ariabel	MV2616-V	EM-Test	0397-12	300003259	k	11.12.2015	11.12.2017
4	A	Hochpass 150 kHz	EZ-25	R&S	100010	300003798	ev	-/-	-/-
5	Α	EMI Test Receiver	ESCI 3	R&S	100083	300003312	k	01.02.2017	31.01.2018
6	A	Customer Notebook	-/-	Dell	P1250643	Ingenico #2	-/-	-/-	-/-

CTC I advanced

6.5 Conducted measurements with peak power meter & spectrum analyzer



OP = AV + CA

(OP-output power; AV-analyzer value; CA-loss signal path)

Example calculation:

OP [dBm] = 6.0 [dBm] + 11.7 [dB] = 17.7 [dBm] (58.88 mW)

No.	Lab / Item	Equipment	Туре	Manufacturer	Serial No.	INV. No.	Kind of Calibration	Last Calibration	Next Calibration
1	A	Signal Analyzer 40 GHz	FSV40	R&S	101042	300004517	k	25.01.2017	24.01.2018
2	А, В	Isolating Transformer	RT5A	Grundig	12780	300001166	ev	-/-	-/-
3	А, В	PC-WLAN Tester	Intel Core i3 3220/3,3 GHz, Prozessor	-/-	2V2403033A45 23	300004589	ne	-/-	-/-
4	А, В	Teststand	Teststand Custom Sequence Editor	National Instruments GmbH	-/-	300004590	ne	-/-	-/-
5	В	Power Sensor	NRP-Z81	R&S	-/-	300003780	k	26.01.2017	25.01.2019
6	А, В	RF-Cable	ST18/SMAm/SMAm/ 60	Huber & Suhner	Batch no. 606844	400001181	ev	-/-	-/-
7	А, В	DC-Blocker 0.1-40 GHz	8141A	Inmet	-/-	400001185	ev	-/-	-/-
8	А, В	Coax Attenuator 10 dB 2W 0-40 GHz	MCL BW-K10- 2W44+	Mini Circuits	-/-	400001186	ev	-/-	-/-
9	А, В	Synchron Power Meter	SPM-4	СТС	1	400001294	ev	-/-	-/-
10	А, В	Hy gro-Thermometer	5-45C, 20-100rF	-/-	-/-	400000108	ev	-/-	-/-



7 Sequence of testing

7.1 Sequence of testing radiated spurious 9 kHz to 30 MHz

Setup

- The equipment is set up to simulate normal operation mode as described in the user manual or defined by the manufacturer.
- If the EUT is a tabletop system, it is placed on a table with 0.8 m height.
- If the EUT is a floor standing device, it is placed directly on the turn table.
- Auxiliary equipment and cables are positioned to simulate normal operation conditions as described in ANSI C 63.4.
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- Measurement distance is 3 m (see ANSI C 63.4) see test details.
- EUT is set into operation.

Premeasurement*

- The turntable rotates from 0° to 315° using 45° steps.
- The antenna height is 1 m.
- At each turntable position the analyzer sweeps with positive-peak detector to find the maximum of all emissions.

Final measurement

- Identified emissions during the pre-measurement are maximized by the software by rotating the turntable from 0° to 360°.
- Loop antenna is rotated about its vertical axis for maximum response at each azimuth about the EUT. (For certain applications, the loop antenna plane may also need to be positioned horizontally at the specified distance from the EUT)
- The final measurement is done in the position (turntable and elevation) causing the highest emissions with quasi-peak (as described in ANSI C 63.4).
- Final levels, frequency, measuring time, bandwidth, turntable position, correction factor, margin to the limit and limit will be recorded. A plot with the graph of the premeasurement and the limit is stored.

*)Note: The sequence will be repeated three times with different EUT orientations.



7.2 Sequence of testing radiated spurious 30 MHz to 1 GHz

Setup

- The equipment is set up to simulate normal operation mode as described in the user manual or defined by the manufacturer.
- If the EUT is a tabletop system, a table with 0.8 m height is used, which is placed on the ground plane.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Auxiliary equipment and cables are positioned to simulate normal operation conditions as described in ANSI C 63.4.
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- Measurement distance is 10 m or 3 m (see ANSI C 63.4) see test details.
- EUT is set into operation.

Premeasurement

- The turntable rotates from 0° to 315° using 45° steps.
- The antenna is polarized vertical and horizontal.
- The antenna height changes from 1 m to 3 m.
- At each turntable position, antenna polarization and height the analyzer sweeps three times in peak to find the maximum of all emissions.

Final measurement

- The final measurement is performed for at least six highest peaks according to the requirements of the ANSI C63.4.
- Based on antenna and turntable positions at which the peak values are measured the software maximize the peaks by changing turntable position $\pm 45^{\circ}$ and antenna height between 1 and 4 m.
- The final measurement is done with quasi-peak detector (as described in ANSI C 63.4).
- Final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit and limit are recorded. A plot with the graph of the premeasurement with marked maximum final results and the limit is stored.



7.3 Sequence of testing radiated spurious 1 GHz to 18 GHz

Setup

- The equipment is set up to simulate normal operation mode as described in the user manual or defined by the manufacturer.
- If the EUT is a tabletop system, a 2-axis positioner with 1.5 m height is used.
- If the EUT is a floor standing device, it is placed directly on the turn table.
- Auxiliary equipment and cables are positioned to simulate normal operation conditions as described in ANSI C 63.4.
- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.
- Measurement distance is 3 m (see ANSI C 63.4) see test details.
- EUT is set into operation.

Premeasurement

- The turntable rotates from 0° to 315° using 45° steps.
- The antenna is polarized vertical and horizontal.
- The antenna height is 1.5 m.
- At each turntable position and antenna polarization the analyzer sweeps with positive peak detector to find the maximum of all emissions.

Final measurement

- The final measurement is performed for at least six highest peaks according to the requirements of the ANSI C63.4.
- Based on antenna and turntable positions at which the peak values are measured the software maximizes the peaks by rotating the turntable from 0° to 360°. This measurement is repeated for different EUT-table positions (0° to 150° in 30°-steps) and for both antenna polarizations.
- The final measurement is done in the position (turntable, EUT-table and antenna polarization) causing the highest emissions with Peak and RMS detector (as described in ANSI C 63.4).
- Final levels, frequency, measuring time, bandwidth, turntable position, EUT-table position, antenna polarization, correction factor, margin to the limit and limit are recorded. A plot with the graph of the premeasurement with marked maximum final results and the limit is stored.



7.4 Sequence of testing radiated spurious above 18 GHz

Setup

- The equipment is set up to simulate normal operation mode as described in the user manual or defined by the manufacturer.
- Auxiliary equipment and cables are positioned to simulate normal operation conditions as described in ANSI C 63.4.
- The AC power port of the EUT (if available) is connected to a power outlet.
- The measurement distance is as appropriate (e.g. 0.5 m).
- The EUT is set into operation.

Premeasurement

 The test antenna is handheld and moved carefully over the EUT to cover the EUT's whole sphere and different polarizations of the antenna.

Final measurement

- The final measurement is performed at the position and antenna orientation causing the highest emissions with Peak and RMS detector (as described in ANSI C 63.4).
- Final levels, frequency, measuring time, bandwidth, correction factor, margin to the limit and limit are recorded. A plot with the graph of the premeasurement and the limit is stored.



Measurement uncertainty 8

Measurement uncertainty						
Test case	Uncertainty					
Antenna gain	± 3 dB					
Power spectral density	± 1.5 dB					
Spectrum bandwidth	± 100 kHz (depends on the used RBW)					
Occupied bandwidth	± 100 kHz (depends on the used RBW)					
Maximum output power	± 1.5 dB					
Minimum emissions bandwidth	± 100 kHz (depends on the used RBW)					
Spurious emissions conducted	± 3 dB					
Spurious emissions radiated below 30 MHz	± 3 dB					
Spurious emissions radiated 30 MHz to 1 GHz	± 3 dB					
Spurious emissions radiated 1 GHz to 12.75 GHz	± 3.7 dB					
Spurious emissions radiated above 12.75 GHz	± 4.5 dB					
Spurious emissions conducted below 30 MHz (AC conducted)	± 2.6 dB					



Summary of measurement results 9

	No deviations from the technical specifications were ascertained
	There were deviations from the technical specifications ascertained
\boxtimes	This test report is only a partial test report. The content and verdict of the performed test cases are listed below.

TC Identifier	Description	Verdict	Date	Remark
RF-Testing	CFR Part 15 RSS 247, Issue 2	See table	2017-11-29	-/-

Test specification clause	Test case	Temperature conditions	Power source voltages	с	NC	NA	NP	Remark
-/-	Output pow er verification (cond.)	Nominal	Nominal	-/-				-/-
-/-	Antenna gain	Nominal	Nominal		-/-	-		-/-
U-NII Part 15	Duty cycle	Nominal	Nominal		-/-	-		-/-
§15.407(a) RSS - 247 (6.2.1.1) RSS - 247 (6.2.2.1) RSS - 247 (6.2.3.1) RSS - 247 (6.2.4.1)	Maximum output pow er (conducted & radiated)	Nominal	Nominal	\boxtimes				-/-
§15.407(a) RSS - 247 (6.2.1.1) RSS - 247 (6.2.2.1) RSS - 247 (6.2.3.1) RSS - 247 (6.2.4.1)	Pow er spectral density	Nominal	Nominal	\boxtimes				-/-
RSS - 247 (6.2.4.1)	Spectrum bandw idth 6dB bandw idth	Nominal	Nominal	\boxtimes				-/-
§15.407(a) RSS - 247 (6.2.1.2)	Spectrum bandw idth 26dB bandw idth	Nominal	Nominal	\boxtimes				-/-
RSS Gen clause 6.6	Spectrum bandw idth 99% bandw idth	Nominal	Nominal		-/-	-		-/-
§15.205 RSS - 247 (6.2.1.2) RSS - 247 (6.2.2.2) RSS - 247 (6.2.3.2) RSS - 247 (6.2.4.2)	Band edge compliance radiated	Nominal	Nominal	\boxtimes				-/-
§15.407(b) RSS - 247 (6.2.1.2) RSS - 247 (6.2.2.2) RSS - 247 (6.2.3.2) RSS - 247 (6.2.4.2)	TX spurious emissions radiated	Nominal	Nominal	\boxtimes				-/-
§15.109 RSS-Gen	RX spurious emissions radiated	Nominal	Nominal	\boxtimes				-/-
§15.209(a) RSS-Gen	Spurious emissions radiated < 30 MHz	Nominal	Nominal	\boxtimes				-/-
§15.107(a) §15.207	Spurious emissions conducted emissions < 30 MHz	Nominal	Nominal	\boxtimes				-/-
§15.407 RSS - 247 (6.3)	DFS	Nominal	Nominal		-/-	-		See report 1-4862/17-01-04

Notes:

	C:	Compliant	NC:	Not compliant	NA:	Not applicable	NP:	Not performed
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10 Additional comments

Reference documents: DFS report: 1-4862_17-01-04

Special test descriptions:

Channel	36	40	44	48	52	56	60	64	100	120	140	149	157	165
11a	13	13	13	13	13	13	13	13	13	13	13	13	13	13
11n-20	12	12	12	12	12	12	12	12	12	12	12	12	12	12
11n-40	9	9	9	9	9	9	9	9	6	9	9	9	9	9

In addition to the power table above, Ingenico calibration files were used. These files have a relevant impact on the performance and spectral appearance of each channel

Configuration descriptions: None

Provided channels:

Channels with 20 MHz channel bandwidth:

	U-NII-1 & U-NII-2A (5150 MHz to 5250 MHz & 5250 MHz to 5350 MHz) channel number & centre frequency							
channel	36	40	44	48	52	56	60	64
f _c / MHz	5180	5200	5220	5240	5260	5280	5300	5320

					(5470 MH Imber & (
channel	100	104	108	112	116	120	124	128	132	136	140
f _c / MHz	5500	5520	5540	5560	5580	5600	5620	5640	5660	5680	5700

U-NII-3 (5725 MHz to 5850 MHz) channel number & centre frequency						
channel	149	153	157	161	165	
f _c / MHz	5745	5765	5785	5805	5825	

Channels with 40 MHz channel bandwidth:

U-NII-1 & U-NII-2A (5150 MHz to 5250 MHz & 5250 MHz to 5350 MHz) channel number & centre frequency							
channel	38 46 54 62						
f _c / MHz	5190	5230)	5270	5310		
U-NII-2C (5470 MHz to 5725 MHz) channel number & centre frequency							
channel	102	110	118	126	134		
f _c / MHz	5510	5550	5590	5630	5670		
U-NII-3 (5725 MHz to 5850 MHz)							

	channel number & cent	,
channel	151	159
f _c / MHz	5755	5795

Note: The channels used for the tests were marked in bold in the list.

Test report	no.: 1-486	2/17-01-03 CTC advanced
Test mode:		No test mode available. Iperf was used to ping another device with the largest support packet size
	\boxtimes	Special software is used. EUT is transmitting pseudo random data by itself
Antennas and transmit operating modes:	\boxtimes	 Operating mode 1 (single antenna) Equipment with 1 antenna, Equipment with 2 diversity antennas operating in switched diversity mode by which at any moment in time only 1 antenna is used, Smart antenna system with 2 or more transmit/receive chains, but operating in a mode where only 1 transmit/receive chain is used)
		Operating mode 2 (multiple antennas, no beamforming) - Equipment operating in this mode contains a smart antenna system using two or more transmit/receive chains simultaneously but without beamforming.
		 Operating mode 3 (multiple antennas, with beamforming) Equipment operating in this mode contains a smart antenna system using two or more transmit/receive chains simultaneously with beamforming. In addition to the antenna assembly gain (G), the beamforming gain (Y) may have to be taken into account when performing the measurements.



11 Measurement results

11.1 Identify worst case data rate

Measurement:

All modes of the module will be measured with an average/peak power meter to identify the maximum transmission power on mid channel. In the case that only one or two channels are available, only these will be measured.

In further tests only the identified worst case modulation scheme or bandwidth will be measured.

Measurement parameters:

Measurement parameter		
Detector:	Peak	
Sweep time:	Auto	
Resolution bandwidth:	3 MHz	
Video bandwidth:	3 MHz	
Trace mode:	Max hold	
Used test setup:	See chapter 6.5 – B	
Measurement uncertainty:	See chapter 8	

Results:

	Modul		ulation sche	me / bandwi	dth	
OFDM – mode	U-NII-1 &	U-NII-2A	U-N	II-2C	N-U	III-3
	Low channel	high channel	Low channel	high channel	Low channel	high channel
a – mode	6Mbit/s	6Mbit/s	6Mbit/s	6Mbit/s	6Mbit/s	6Mbit/s
n/ac HT20 – mode	MCS0	MCS0	MCS0	MCS0	MCS0	MCS0
n/ac HT40 – mode	MCS0	MCS0	MCS0	MCS0	MCS0	MCS0



11.2 Antenna gain

Description:

The antenna gain of the complete system is calculated by the difference of radiated power in EIRP and the conducted power of the module.

Measurement parameters:

Measurement parameter			
Detector:	Peak		
Sweep time:	Auto		
Resolution bandwidth:	3 MHz		
Video bandwidth:	3 MHz		
Trace mode:	Max. hold		
Test setup:	See chapter 6.2 – C (radiated) See chapter 6.5 – A (conducted)		
Measurement uncertainty:	See chapter 8		

Limits:

Antenna Gain
6 dBi / > 6 dBi output power and power density reduction required



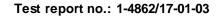
Results:

U-NII-1	Antenna gain			
(5150 MHz to 5250 MHz)	Lowest channel	Middle channel	Highest channel	
Conducted power / dBm @ 3 MHz RBW	14.4	14.3	13.8	
Radiated power / dBm @ 3 MHz RBW	18.3	18.1	17.4	
Gain / dBi calculated	4.0	3.8	3.6	

U-NII-2A	Antenna gain		
(5250 MHz to 5350 MHz)	Lowest channe	Middle channel	Highest channel
Conducted power / dBm @ 3 MHz RBW	13.9	14.3	14.9
Radiated power / dBm @ 3 MHz RBW	18.1	18.7	19.6
Gain / dBi calculated	4.2	4.4	4.7

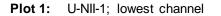
U-NII-2C		Antenna gain	
(5470 MHz to 5725 MHz)	Lowest channel	Middle channel	Highest channel
Conducted power / dBm @ 3 MHz RBW	17.3	15.0	14.7
Radiated power / dBm @ 3 MHz RBW	22.6	19.5	18.2
Gain / dBi calculated	5.3	4.5	3.5

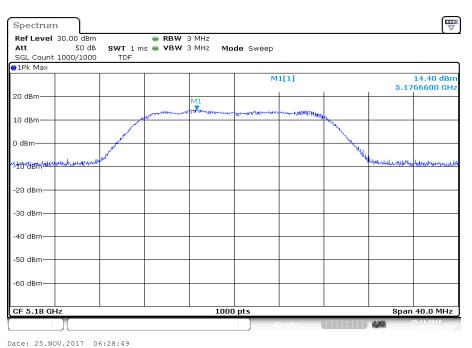
U-NII-3	Antenna gain		
(5725 MHz to 5850 MHz)	Lowest channel	Middle channel	Highest channel
Conducted power / dBm @ 3 MHz RBW	15.4	15.0	16.0
Radiated power / dBm @ 3 MHz RBW	19.3	18.4	19.1
Gain / dBi calculated	3.9	3.4	3.1



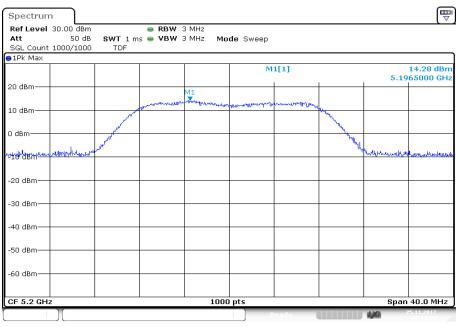


Plots (conducted):





Plot 2: U-NII-1; middle channel

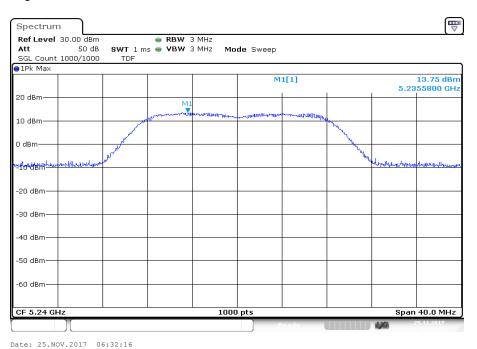


Date: 25.NOV.2017 06:51:30

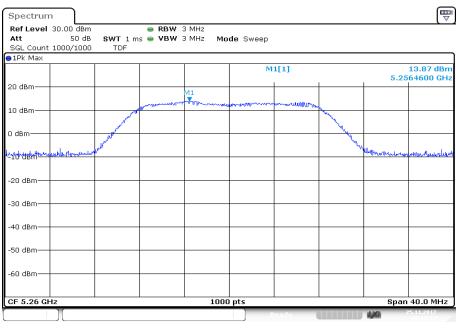




Plot 3: U-NII-1; highest channel



Plot 4: U-NII-2A; lowest channel

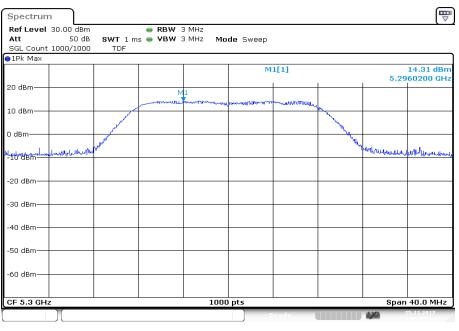


Date: 25.NOV.2017 06:39:14



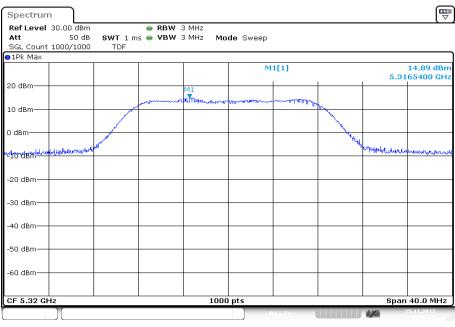


Plot 5: U-NII-2A; middle channel



Date: 25.NOV.2017 06:54:14

Plot 6: U-NII-2A; highest channel

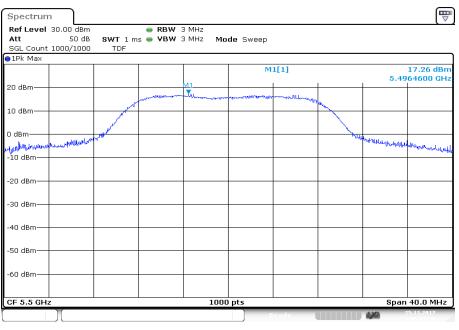


Date: 25.NOV.2017 06:48:26



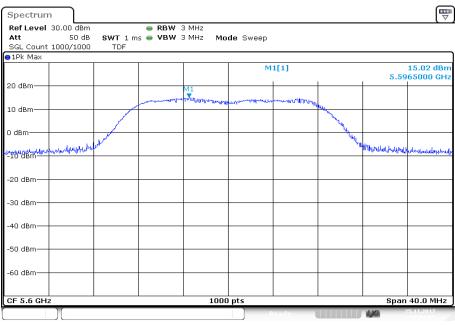


Plot 7: U-NII-2C; lowest channel



Date: 25.NOV.2017 06:57:36

Plot 8: U-NII-2C; middle channel

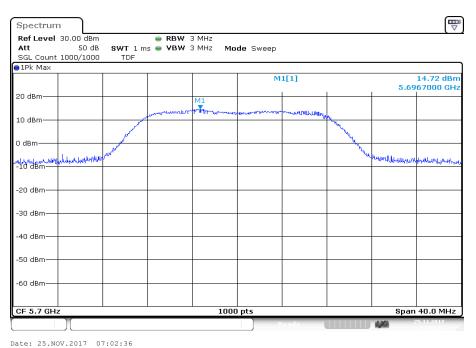


Date: 25.NOV.2017 07:00:06

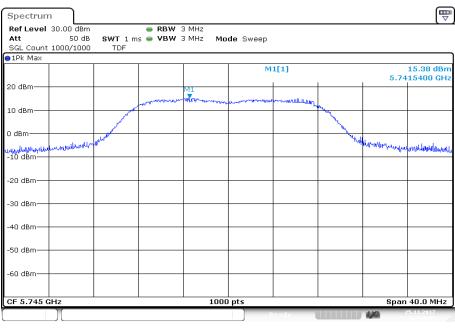




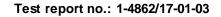
Plot 9: U-NII-2C; highest channel



Plot 10: U-NII-3; lowest channel

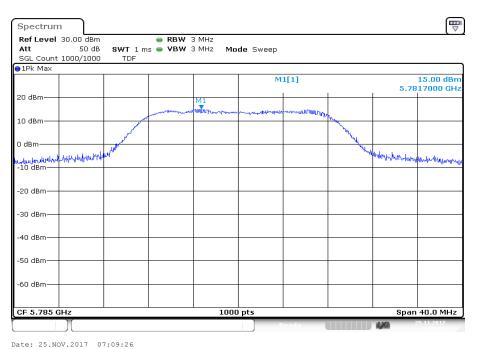


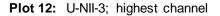
Date: 25.NOV.2017 07:05:02

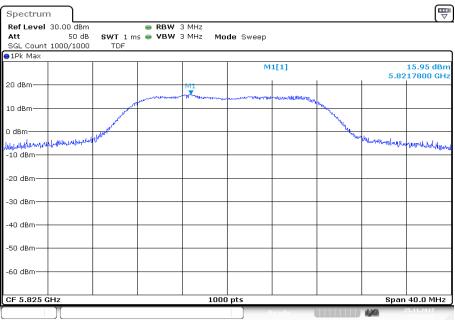




Plot 11: U-NII-3; middle channel







Date: 25.NOV.2017 07:12:21



11.3 Duty cycle

Description:

The duty cycle is necessary to compute the maximum power during an actual transmission. The shown plots and values are to show an example of the measurement procedure. The real value is measured direct during the power measurement or power density measurement. The correction value is shown in each plot of these measurements.

Measurement:

Measurement parameter			
According to: KDB789033 D02, B.			
Detector:	Peak		
Sweep time:	Auto		
Resolution bandwidth:	10 MHz		
Video bandwidth:	10 MHz		
Span: Zero			
Trace mode: Video trigger / view / single sweep			
Used test setup: See chapter 6.5 – A			
Measurement uncertainty: See chapter 8			

Results:

Duty cycle and correction factor:

		Calculatio	n method	
OFDM – mode	Ton (D2plot) * 100 / T _{complete} (D3plot) = duty cycle 10 * log(duty cycle) = correction factor			
	Ton (D2 _{plot})	T _{complete} (D3 _{plot})	Duty cycle	Correction factor
a – mode	-/-	-/-	100 %	0.0 dB
n/ac HT20 – mode	-/-	-/-	100 %	0.0 dB
n/ac HT40 – mode	-/-	-/-	100 %	0.0 dB
ac HT80 – mode	-/-	-/-	100 %	0.0 dB
ac HT160 – mode	-/-	-/-	100 %	0.0 dB



11.4 Maximum output power

11.4.1 Maximum output power according to FCC requirements

Description:

Measurement of the maximum output power conducted

Measurement:

Measurement parameter		
According to: KDB789033 D02, E.2.e.		
Detector: RMS		
Sweep time:	≥10*(swp points)*(total on/off time)	
Resolution bandwidth:	1 MHz	
Video bandwidth:	3 MHz	
Span:	> EBW	
Trace mode:	Max hold	
Analyzer function	Band power / channel power Interval > 26 dB EBW	
Used test setup:	See chapter 6.5 – A	
Measurement uncertainty:	See chapter 8	

Limits:

Radiated output power	Conducted output power for mobile equipment
Conducted power + 6 dBi antenna gain	250mW 5.150-5.250 GHz The lesser one of 250mW or 11 dBm + 10 log Bandwidth 5.250-5.350 GHz 250mW or 11 dBm + 10 log Bandwidth 5.470-5.725 GHz (where Bandwidth is the 26dB Bandwidth [MHz]) 1W 5.725-5.85 GHz



Results:

	Maximum output power conducted [dBm]				
	U-NII-1 (5150 MHz to 5250 MHz)				
	Lowest channel	Middle channel	Highest channel		
	11.8	11.8	11.6		
	U-NII-2A (5250 MHz to 5350 MHz)				
	Lowest channel	Middle channel	Highest channel		
а	11.7	12.6	12.7		
	U-NII-2C (5470 MHz to 5725 MHz)				
	Lowest channel	Middle channel	Highest channel		
	15.0	13.6	12.2		
	U-NII-3 (5725 MHz to 5850 MHz)				
	Lowest channel	Middle channel Highest channe			
	13.1	12.9	13.6		

Results:

	Maximum output power conducted [dBm]				
	U-NII-1 (5150 MHz to 5250 MHz)				
	Lowest channel	Middle channel	Highest channel		
	10.3	10.3	10.2		
	U-NII-2A (5250 MHz to 5350 MHz)				
	Lowest channel Middle cha		Highest channel		
n/ac HT20	10.4	11.4	11.3		
	U-NII-2C (5470 MHz to 5725 MHz)				
	Lowest channel	Middle channel	Highest channel		
	14.2	11.5	11.4		
	U-NII-3 (5725 MHz to 5850 MHz)				
	Lowest channel	Middle channel	Highest channel		
	11.7	11.6	12.4		

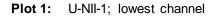


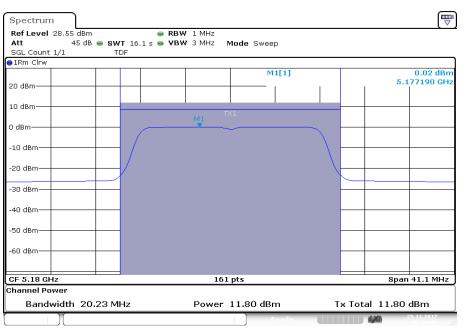
Results:

	Maximum output power conducted [dBm]				
	U-NII-1 (5150 MHz to 5250 MHz)				
	Lowest channel		Highest channel		
	5.3		5.1		
	U-NII-2A (5250 MHz to 5350 MHz)				
	Lowest channel		Highest channel		
n/ac HT40	5.7		6.6		
	U-NII-2C (5470 MHz to 5725 MHz)				
	Lowest channel	Middle channel		Highest channel	
	9.5	9.1		7.7	
	U-NII-3 (5725 MHz to 5850 MHz)				
	Lowest channel		Highest channel		
	8.9		8.7		



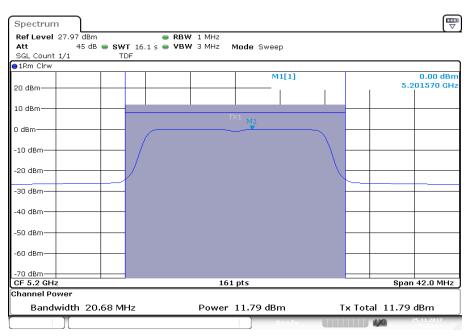
Plots: a - mode





Date: 25.NOV.2017 06:29:46

Plot 2: U-NII-1; middle channel

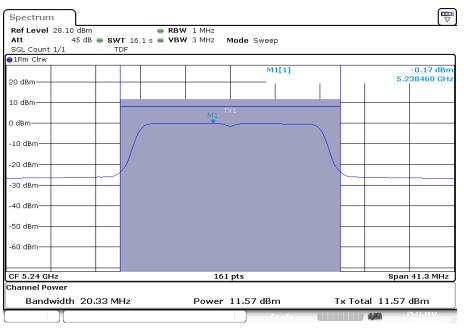


Date: 25.NOV.2017 06:51:55



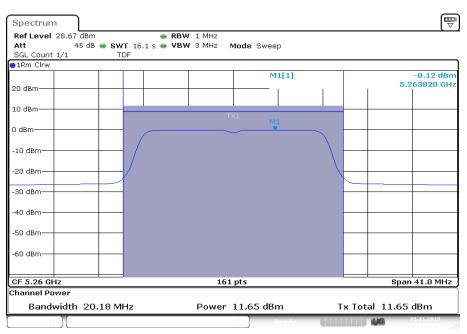


Plot 3: U-NII-1; highest channel



Date: 25.NOV.2017 06:32:42

Plot 4: U-NII-2A; lowest channel

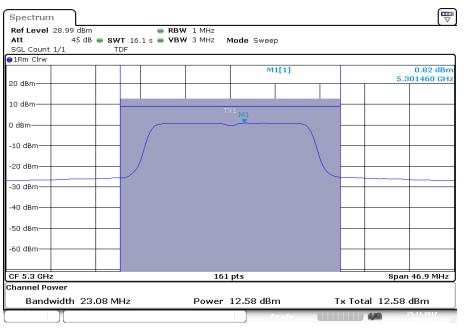


Date: 25.NOV.2017 06:39:39



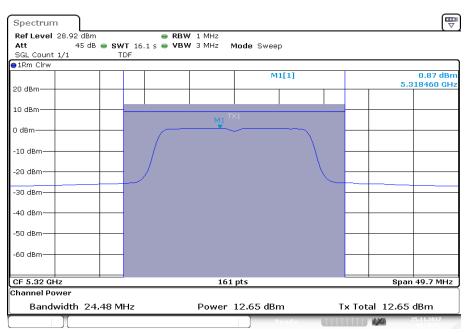


Plot 5: U-NII-2A; middle channel

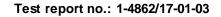


Date: 25.NOV.2017 06:54:39

Plot 6: U-NII-2A; highest channel

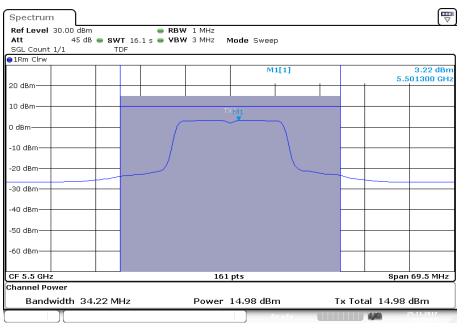


Date: 25.NOV.2017 06:48:51



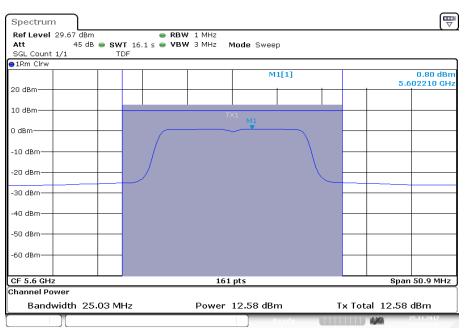


Plot 7: U-NII-2C; lowest channel

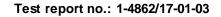


Date: 25.NOV.2017 06:58:00

Plot 8: U-NII-2C; middle channel

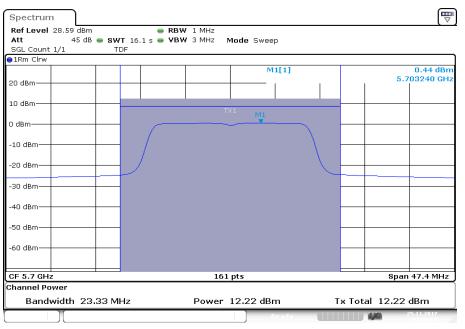


Date: 25.NOV.2017 07:00:30



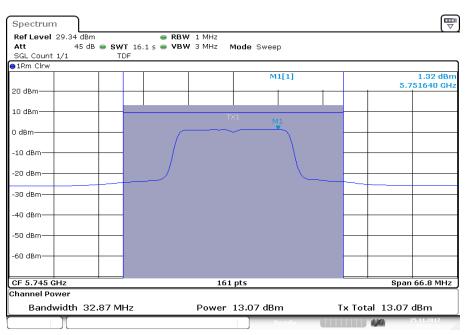


Plot 9: U-NII-2C; highest channel

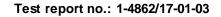


Date: 25.NOV.2017 07:03:00

Plot 10: U-NII-3; lowest channel

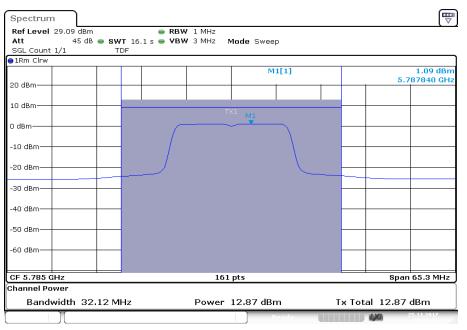


Date: 25.NOV.2017 07:05:26



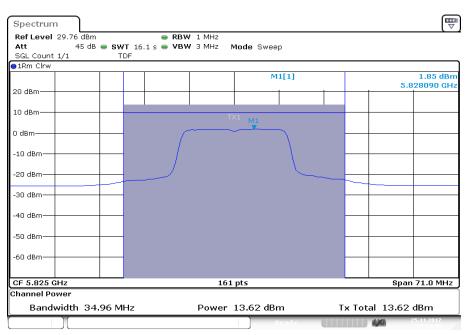


Plot 11: U-NII-3; middle channel

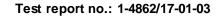


Date: 25.NOV.2017 07:09:50

Plot 12: U-NII-3; highest channel



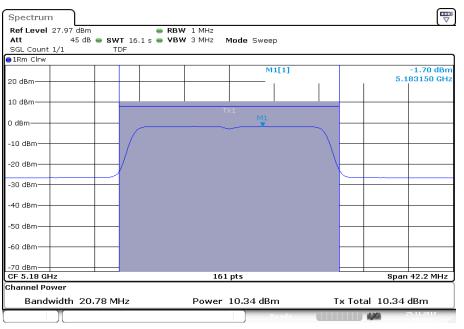
Date: 25.NOV.2017 07:12:45





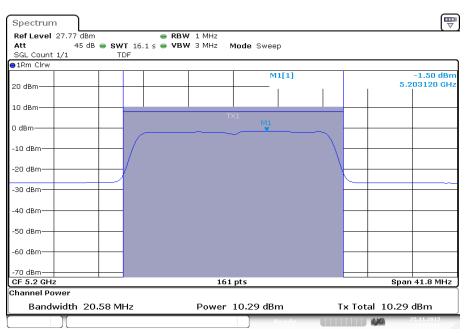
Plots: n/ac HT20 - mode

Plot 1: U-NII-1; lowest channel

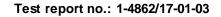


Date: 25.NOV.2017 07:18:42

Plot 2: U-NII-1; middle channel

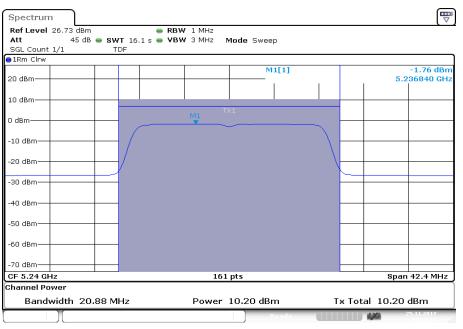


Date: 25.NOV.2017 07:21:11



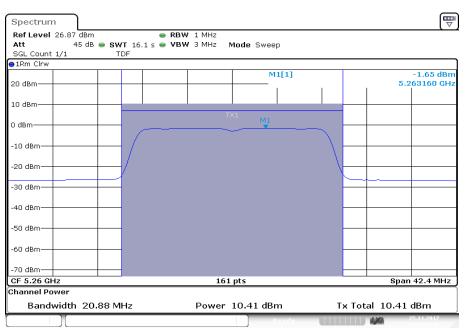


Plot 3: U-NII-1; highest channel



Date: 25.NOV.2017 07:23:39

Plot 4: U-NII-2A; lowest channel

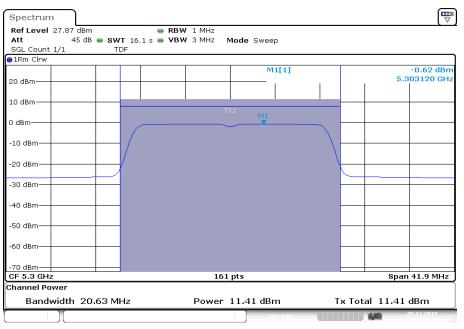


Date: 25.NOV.2017 07:27:26



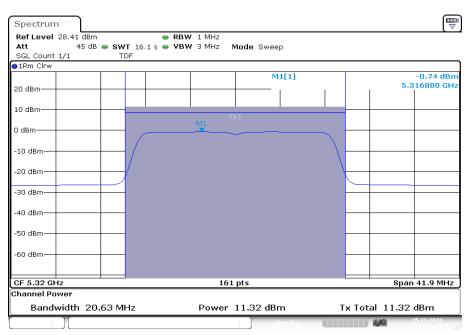


Plot 5: U-NII-2A; middle channel

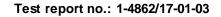


Date: 25.NOV.2017 07:30:14

Plot 6: U-NII-2A; highest channel

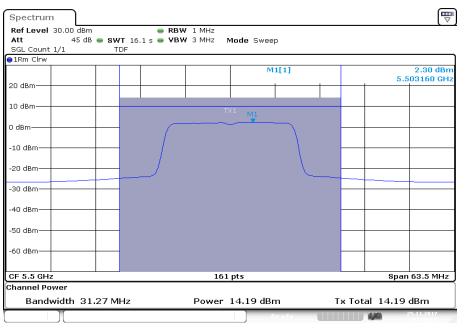


Date: 25.NOV.2017 07:39:32



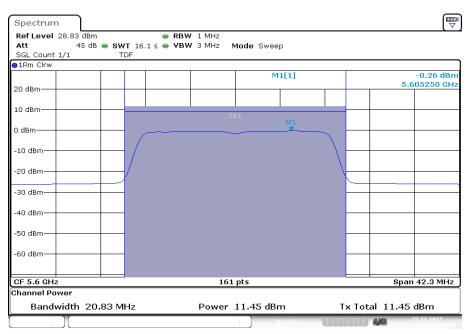


Plot 7: U-NII-2C; lowest channel

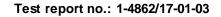


Date: 25.NOV.2017 07:41:55

Plot 8: U-NII-2C; middle channel

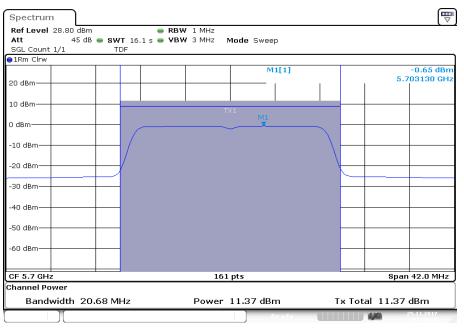


Date: 25.NOV.2017 07:46:27



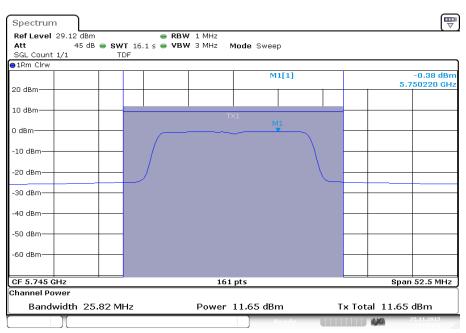


Plot 9: U-NII-2C; highest channel

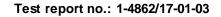


Date: 25.NOV.2017 07:49:48

Plot 10: U-NII-3; lowest channel

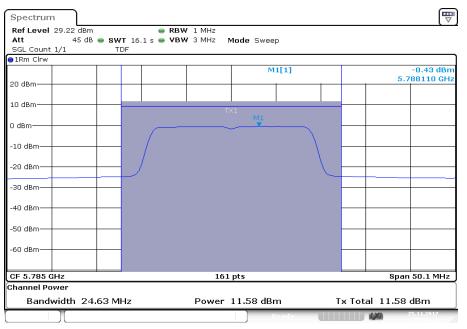


Date: 25.NOV.2017 07:52:31



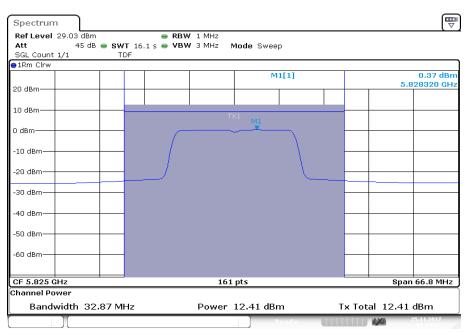


Plot 11: U-NII-3; middle channel

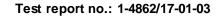


Date: 25.NOV.2017 07:56:29

Plot 12: U-NII-3; highest channel



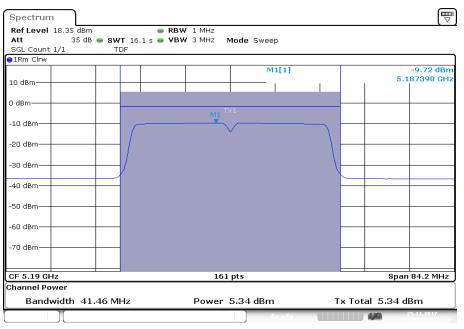
Date: 25.NOV.2017 08:00:10





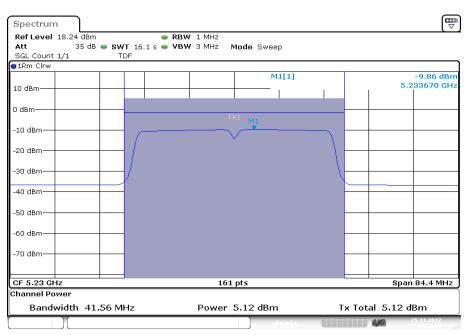
Plots: n/ac HT40 - mode

Plot 1: U-NII-1; lowest channel



Date: 25.NOV.2017 08:05:02

Plot 2: U-NII-1; highest channel

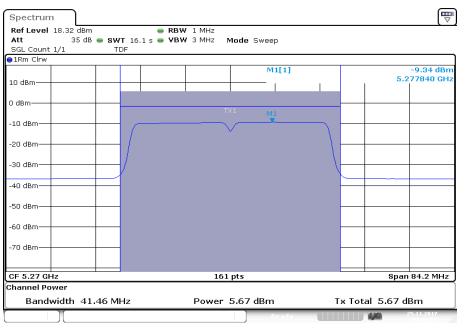


Date: 25.NOV.2017 08:07:30



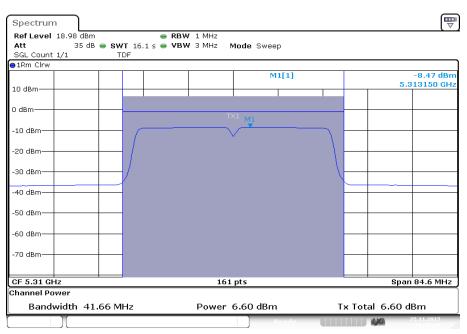


Plot 3: U-NII-2A; lowest channel



Date: 25.NOV.2017 08:09:53

Plot 4: U-NII-2A; highest channel

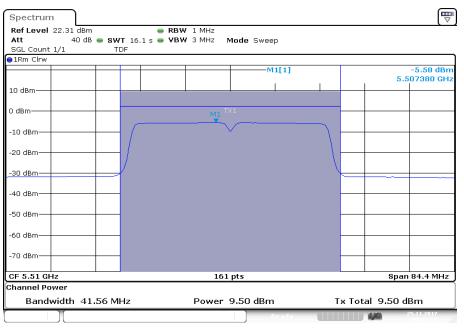


Date: 25.NOV.2017 08:12:10



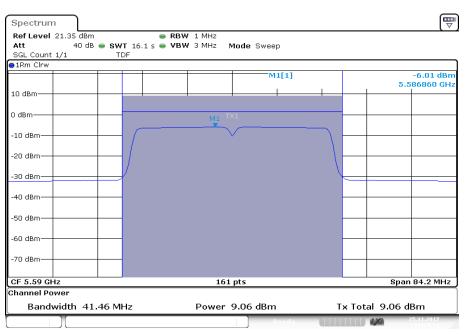


Plot 5: U-NII-2C; lowest channel

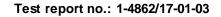


Date: 25.NOV.2017 08:15:53

Plot 6: U-NII-2C; middle channel

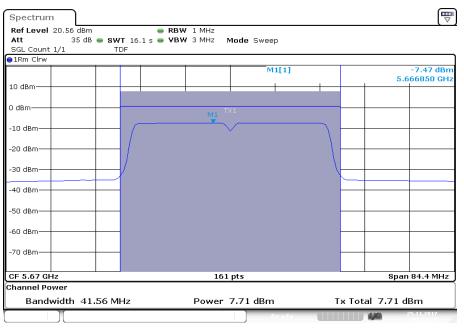


Date: 25.NOV.2017 08:18:12



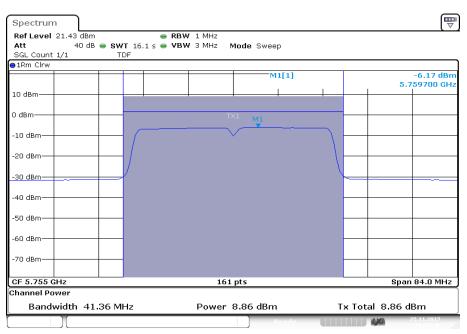


Plot 7: U-NII-2C; highest channel



Date: 25.NOV.2017 08:22:35

Plot 8: U-NII-3; lowest channel

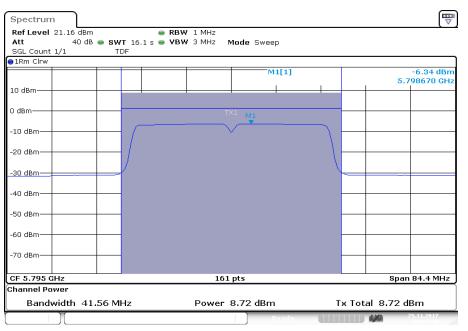


Date: 25.NOV.2017 08:24:46





Plot 9: U-NII-3; highest channel



Date: 25.NOV.2017 08:27:48



11.4.2 Maximum output power according to IC requirements

Description:

Measurement of the maximum output power conduced + radiated

Measurement:

Measurement parameter			
Detector:	RMS		
Sweep time:	≥10*(swp points)*(total on/off time)		
Resolution bandwidth:	1 MHz		
Video bandwidth:	≥ 3 MHz		
Span:	> EBW		
Trace mode:	Max hold		
Analyzer function	Band power / channel power Interval > 99% OBW		
Used test setup:	See chapter 6.5 – A		
Measurement uncertainty:	See chapter 8		

Limits:

Radiated output power	Conducted output power for mobile equipment
The lesser one of	The lesser one of
200 mW or 10 dBm + 10 log Bandwidth 5.150-5.250 GHz 1 W or 17 dBm + 10 log Bandwidth 5.250-5.350 GHz 1 W or 17 dBm + 10 log Bandwidth 5.470-5.725 GHz (where Bandwidth is the 99% Bandwidth [MHz]) Conducted power + 6dBi antenna gain 5.725-5.825 GHz	250mW or 11 dBm + 10 log Bandwidth 5.250-5.350 GHz 250mW or 11 dBm + 10 log Bandwidth 5.470-5.725 GHz (where Bandwidth is the 99% Bandwidth [MHz]) 1W 5.725-5.825 GHz



	Maximum output power [dBm]			
	U-NII-1 (5150 MHz to 5250 MHz)			
	Lowest channel	Middle channel	Highest channel	
	Conducted			
	12.0	11.6	11.4	
	Radiated	(calculated - see chapter anten	na gain)	
	16.0	15.4	15.0	
	U	-NII-2A (5250 MHz to 5350 MHz	:)	
	Lowest channel	Middle channel	Highest channel	
		Conducted		
	11.5	12.4	12.5	
	Radiated	(calculated - see chapter anten	na gain)	
а	15.7	16.8	17.2	
	U-NII-2C (5470 MHz to 5725 MHz)			
	Lowest channel	Middle channel	Highest channel	
		Conducted		
	14.8	12.4	12.1	
	Radiated (calculated – see chapter antenna gain)			
	20.1	16.9	15.6	
	U-NII-3 (5725 MHz to 5850 MHz)			
	Lowest channel	Middle channel	Highest channel	
	Conducted			
	12.9	12.7	13.8	
	Radiated (calculated – see chapter antenna gain)			
	16.8	16.1	16.9	



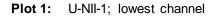
	Maximum output power [dBm]		
	L	U-NII-1 (5150 MHz to 5250 MHz	
	Lowest channel	Middle channel	Highest channel
	Conducted		
	10.5	10.4	10.1
	Radiated	(calculated - see chapter anter	ina gain)
	14.5	14.2	13.7
	U	-NII-2A (5250 MHz to 5350 MHz	2)
	Lowest channel	Middle channel	Highest channel
		Conducted	
	10.3	11.3	11.2
	Radiated (calculated – see chapter antenna gain)		
n/ac HT20	14.5	15.7	15.9
	U-NII-2C (5470 MHz to 5725 MHz)		
	Lowest channel	Middle channel	Highest channel
	Conducted		
	14.2	11.5	11.2
	Radiated (calculated – see chapter antenna gain)		
	19.5	16.0	14.7
	U-NII-3 (5725 MHz to 5850 MHz)		
	Lowest channel	Middle channel	Highest channel
	Conducted		
	11.5	11.4	12.7
	Radiated (calculated – see chapter antenna gain)		
	15.4	14.8	15.8

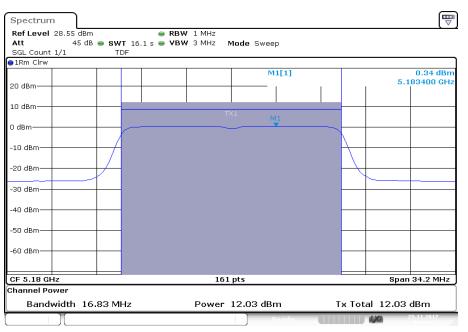


	Maximum output power [dBm]]
	U	J-NII-1 (5150 MI	MHz to 5250 MHz)	
	Lowest channel		Highest channel	
		Cond	ucted	
	5.3		5.0	
	Radiated (calculated – see chapter antenna gain)			
	9.3			8.6
	U-NII-2A (5250 MHz to 5350 MHz)			
	Lowest channel			Highest channel
	Conducted			
	5.6			6.5
	Radiated (calculated – see chapter antenna gain)		č ,	
n/ac HT40	9.8	11.2		
	U-NII-2C (5470 MHz to 5725 MHz)			,
	Lowest channel	Middle		Highest channel
		Condu		
	9.4	9.0		7.6
	Radiated (calculated – see ch			
	14.7	13		11.1
	Conducted)	
			Highest channel	
	8.7		8.6	
	Radiated (calculated – see chapter antenna gain)			nna gain)
	12.6		11.7	



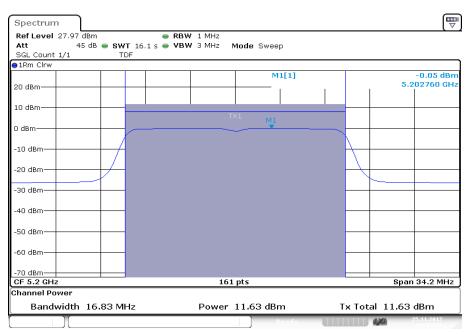
Plots: a - mode



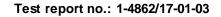


Date: 25.NOV.2017 06:30:25

Plot 2: U-NII-1; middle channel

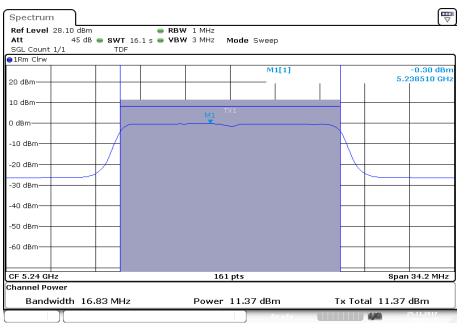


Date: 25.NOV.2017 06:52:32



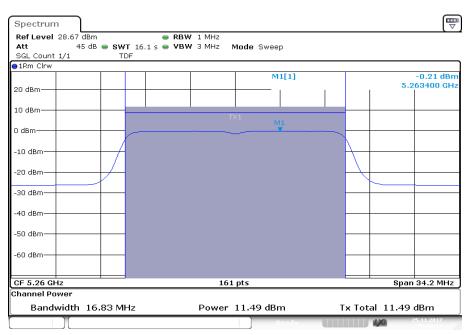


Plot 3: U-NII-1; highest channel



Date: 25.NOV.2017 06:33:19

Plot 4: U-NII-2A; lowest channel

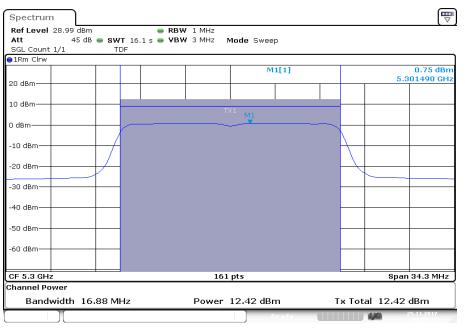


Date: 25.NOV.2017 06:40:17



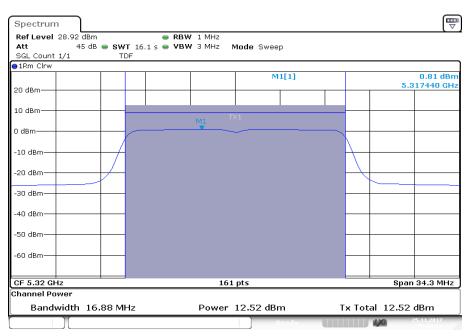


Plot 5: U-NII-2A; middle channel



Date: 25.NOV.2017 06:55:15

Plot 6: U-NII-2A; highest channel

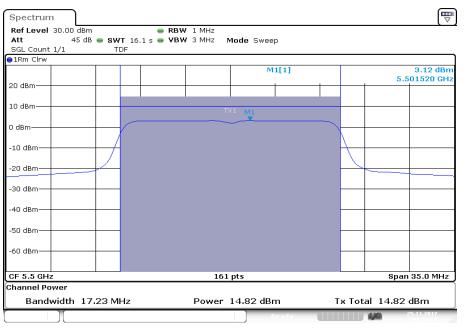


Date: 25.NOV.2017 06:49:26



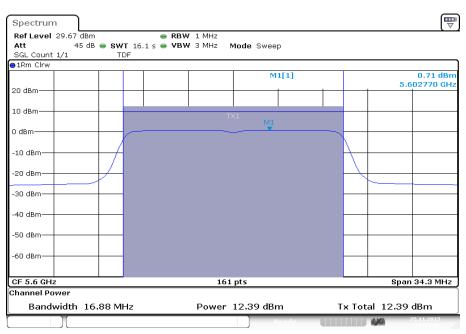


Plot 7: U-NII-2C; lowest channel



Date: 25.NOV.2017 06:58:36

Plot 8: U-NII-2C; middle channel

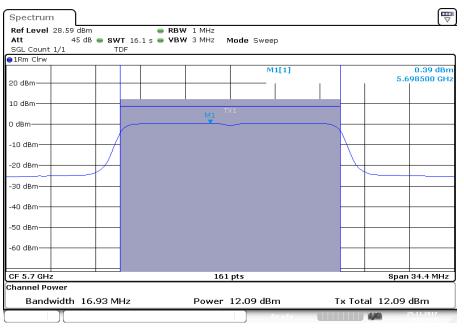


Date: 25.NOV.2017 07:01:05



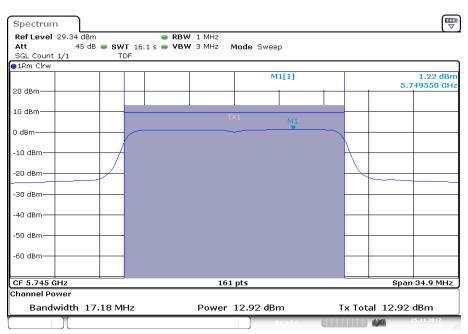


Plot 9: U-NII-2C; highest channel

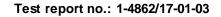


Date: 25.NOV.2017 07:03:36

Plot 10: U-NII-3; lowest channel

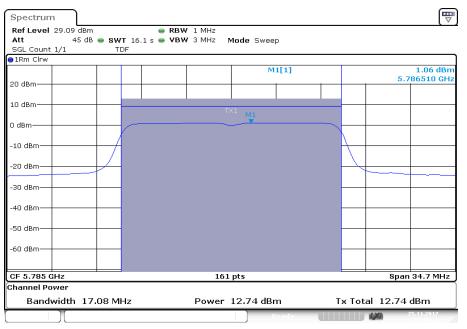


Date: 25.NOV.2017 07:06:01



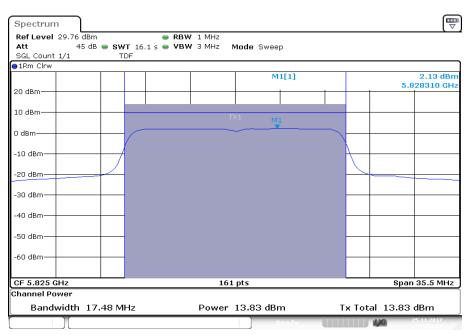


Plot 11: U-NII-3; middle channel

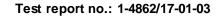


Date: 25.NOV.2017 07:10:26

Plot 12: U-NII-3; highest channel



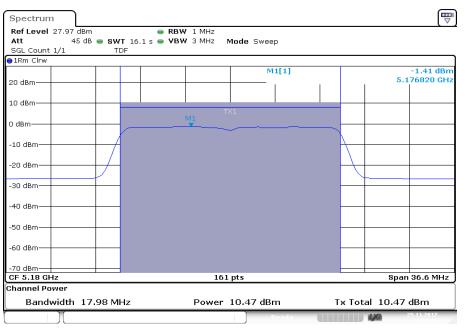
Date: 25.NOV.2017 07:13:20





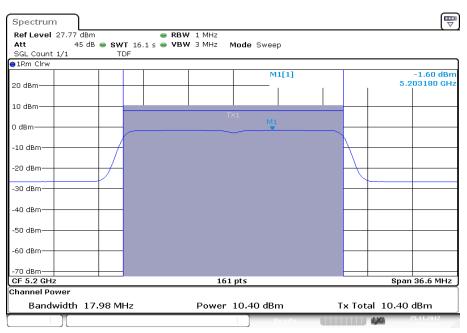
Plots: n/ac HT20 - mode

Plot 1: U-NII-1; lowest channel

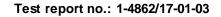


Date: 25.NOV.2017 07:19:19

Plot 2: U-NII-1; middle channel

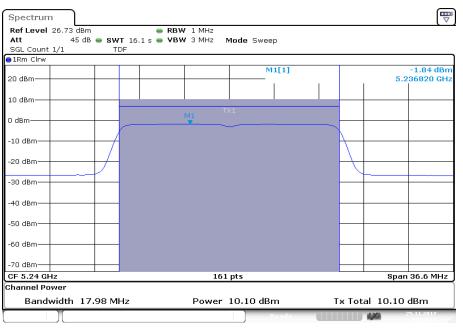


Date: 25.NOV.2017 07:21:47



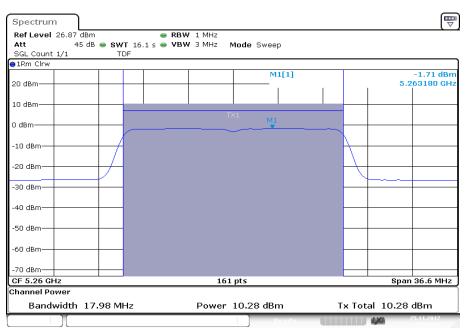


Plot 3: U-NII-1; highest channel



Date: 25.NOV.2017 07:24:14

Plot 4: U-NII-2A; lowest channel

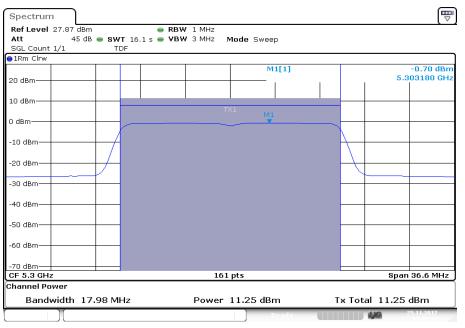


Date: 25.NOV.2017 07:28:01



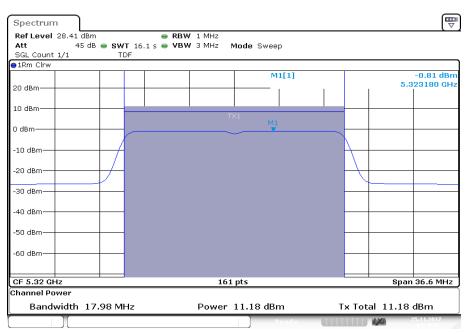


Plot 5: U-NII-2A; middle channel



Date: 25.NOV.2017 07:30:48

Plot 6: U-NII-2A; highest channel

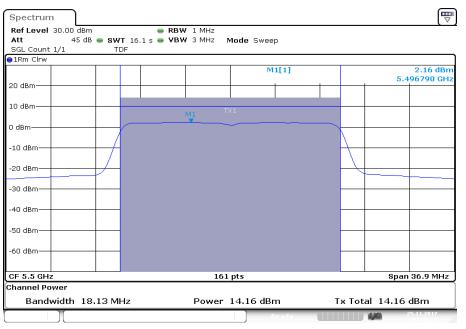


Date: 25.NOV.2017 07:40:05



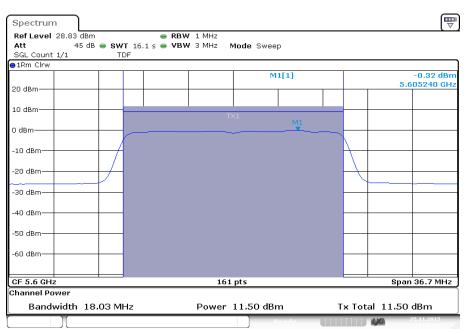


Plot 7: U-NII-2C; lowest channel



Date: 25.NOV.2017 07:42:29

Plot 8: U-NII-2C; middle channel

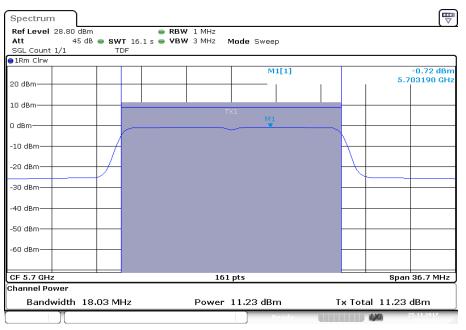


Date: 25.NOV.2017 07:47:01



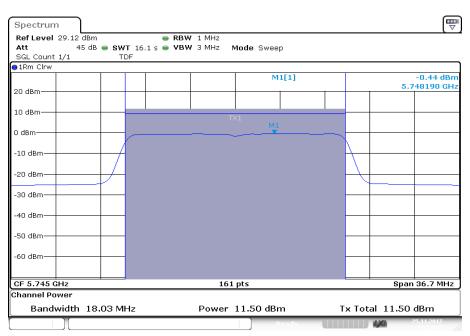


Plot 9: U-NII-2C; highest channel

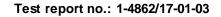


Date: 25.NOV.2017 07:50:23

Plot 10: U-NII-3; lowest channel

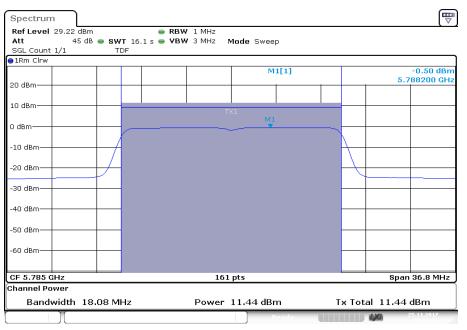


Date: 25.NOV.2017 07:53:05



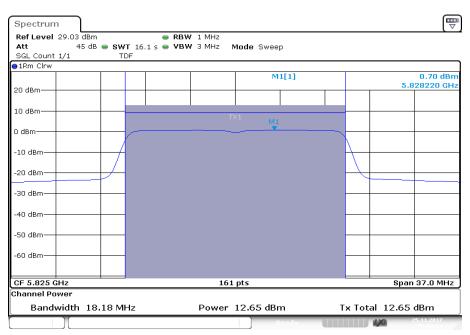


Plot 11: U-NII-3; middle channel

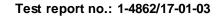


Date: 25.NOV.2017 07:57:03

Plot 12: U-NII-3; highest channel



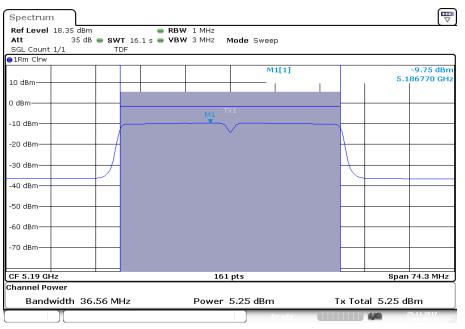
Date: 25.NOV.2017 08:00:44





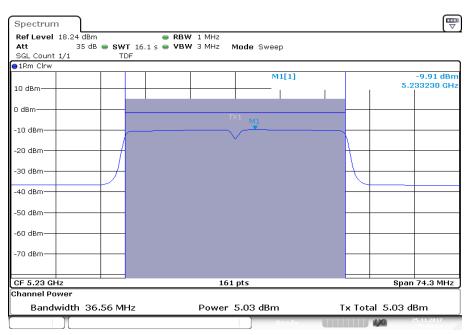
Plots: n/ac HT40 - mode

Plot 1: U-NII-1; lowest channel



Date: 25.NOV.2017 08:05:35

Plot 2: U-NII-1; highest channel

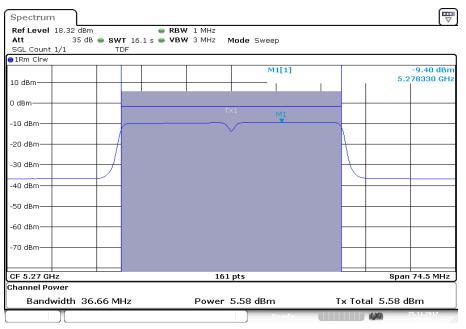


Date: 25.NOV.2017 08:08:04



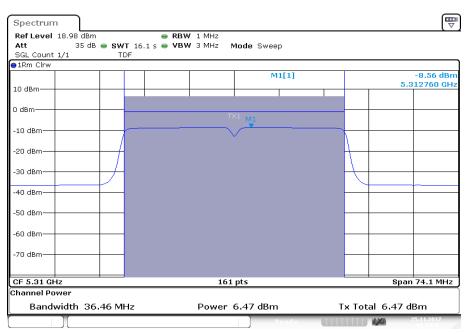


Plot 3: U-NII-2A; lowest channel



Date: 25.NOV.2017 08:10:26

Plot 4: U-NII-2A; highest channel

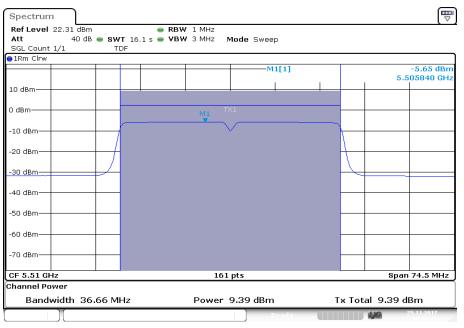


Date: 25.NOV.2017 08:12:43



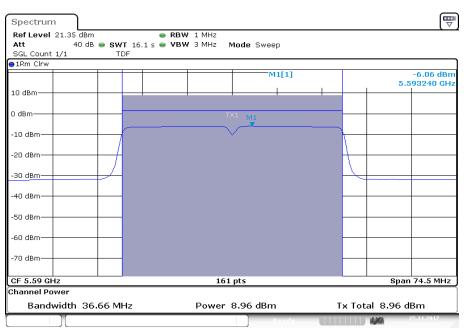


Plot 5: U-NII-2C; lowest channel

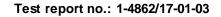


Date: 25.NOV.2017 08:16:25

Plot 6: U-NII-2C; middle channel

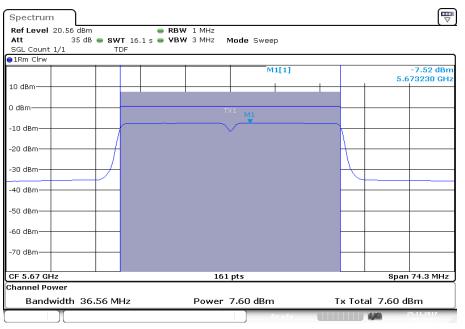


Date: 25.NOV.2017 08:18:44



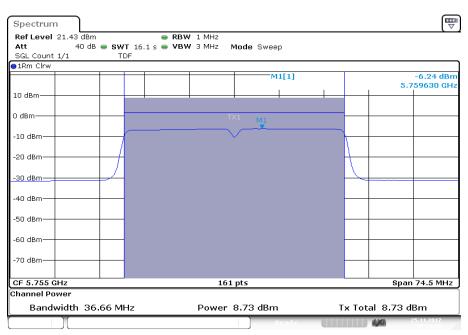


Plot 7: U-NII-2C; highest channel



Date: 25.NOV.2017 08:23:08

Plot 8: U-NII-3; lowest channel

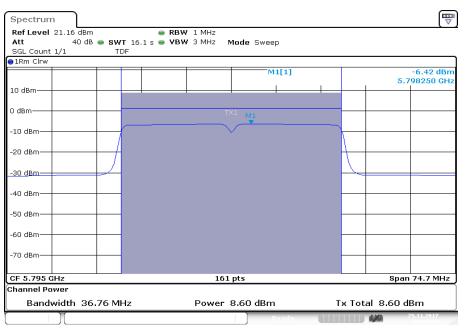


Date: 25.NOV.2017 08:25:18





Plot 9: U-NII-3; highest channel



Date: 25.NOV.2017 08:28:20



11.5 Power spectral density

11.5.1 Power spectral density according to FCC requirements

Description:

Measurement of the power spectral density of a digital modulated system. The measurement is repeated at the lowest, middle and highest channel.

Measurement:

Measurement parameter According to: KDB789033 D02, F.			
Detector: RMS			
Sweep time:	≥10*(swp points)*(total on/off time)		
Resolution bandwidth:	1 MHz for U-NII-1/2A & 2C 500 kHz for U-NII-3		
Video bandwidth: ≥ 3xRBW			
Span: > EBW			
Trace mode: Max hold			
Used test setup: See chapter 6.5 – A			
Measurement uncertainty: See chapter 8			

Limits:

Power Spectral Density	
power spectral density conducted ≤ 11 dBm in any 1 MHz band (band 5150 – 5250 MHz)	
power spectral density conducted ≤ 11 dBm in any 1 MHz band (band 5250 – 5350 MHz) power spectral density conducted ≤ 11 dBm in any 1 MHz band (band 5470 – 5725 MHz)	
power spectral density conducted ≤ 30 dBm in any 500 kHz band (band 5725 – 5850 MHz)	



Results:

	Power spectral density (dBm/1MHz or dBm/500kHz)			
	U-NII-1 (5150 MHz to 5250 MHz)			
	Lowest channel	Middle channel	Highest channel	
	0.02	0.00	-0.17	
	U-NII-2A (5250 MHz to 5350 MHz)			
	Lowest channel	Middle channel	Highest channel	
а	-0.12	0.82	0.87	
	U-NII-2C (5470 MHz to 5725 MHz)			
	Lowest channel	Middle channel	Highest channel	
	3.22	0.80	0.44	
	U-NII-3 (5725 MHz to 5850 MHz)			
	Lowest channel	Middle channel	Highest channel	
	-1.38	-1.85	-0.82	

	Power spectral density (dBm/1MHz or dBm/500kHz)		
	U-NII-1 (5150 MHz to 5250 MHz)		
	Lowest channel	Middle channel	Highest channel
	-1.70	-1.50	-1.76
	U-NII-2A (5250 MHz to 5350 MHz)		
	Lowest channel	Middle channel	Highest channel
n/ac HT20	-1.65	-0.62	-0.74
	U-NII-2C (5470 MHz to 5725 MHz)		
	Lowest channel	Middle channel	Highest channel
	2.30	-0.26	-0.65
	U-NII-3 (5725 MHz to 5850 MHz)		
	Lowest channel	Middle channel	Highest channel
	-2.95	-3.11	-2.14

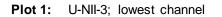


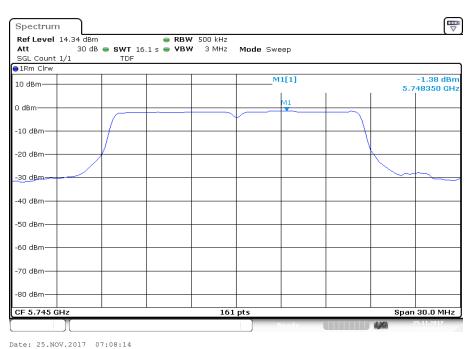
Results:

	Power spe	ctral density (d	Bm/1MHz or dE	3m/500kHz)			
	U-NII-1 (5150 MHz to 5250 MHz)						
	Lowest channel		Highest channel				
	-9.72			-9.86			
	U	Hz to 5350 MHz	z)				
	Lowest channel		Highest channel				
n/ac HT40	-9.34		-8.47				
	U-NII-2C (5470 MHz to 5725 MHz)						
	Lowest channel	Middle	channel	Highest channel			
	-5.58	-6.	01	-7.47			
	L	Hz to 5850 MHz)				
	Lowest channel		Highest channel				
	-9.34			-9.55			

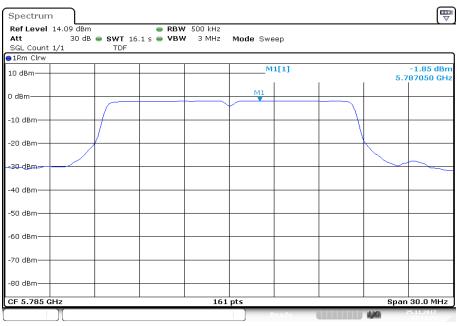


Plots: a - mode





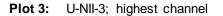
Plot 2: U-NII-3; middle channel

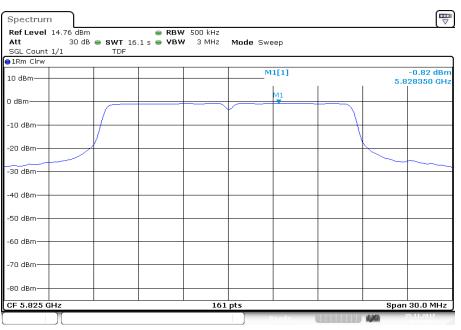


Date: 25.NOV.2017 07:11:23

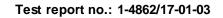






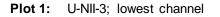


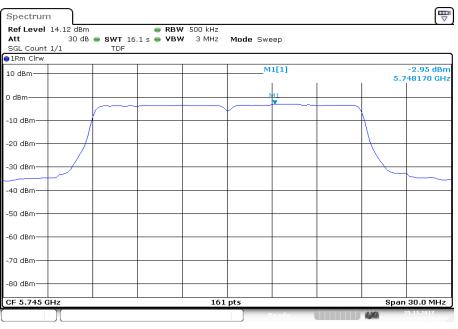
Date: 25.NOV.2017 07:14:17





Plots: n/ac HT20 - mode





Date: 25.NOV.2017 07:54:28

Plot 2: U-NII-3; middle channel

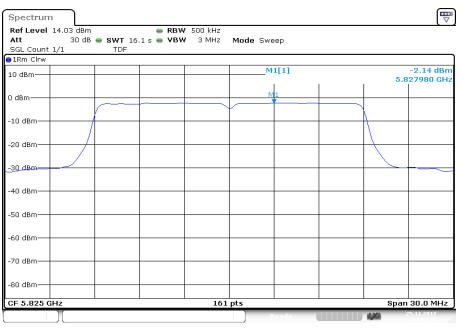


Date: 25.NOV.2017 07:58:18

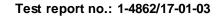




Plot 3: U-NII-3; highest channel

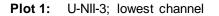


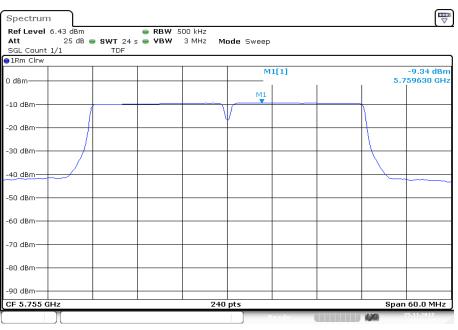
Date: 25.NOV.2017 08:01:40





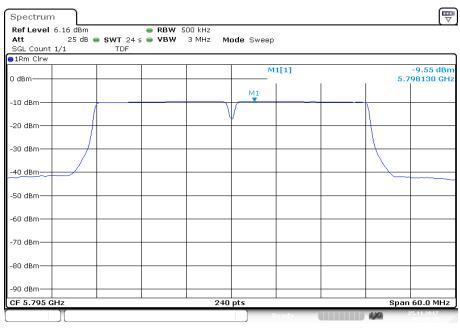
Plots: n/ac HT40 - mode





Date: 25.NOV.2017 08:26:30

Plot 2: U-NII-3; highest channel



Date: 25.NOV.2017 08:29:33



11.5.2 Power spectral density according to IC requirements

Description:

Measurement of the power spectral density of a digital modulated system. The measurement is repeated at the lowest, middle and highest channel.

Measurement:

Measureme	nt parameter
Detector:	RMS
Sweep time:	≥10*(swp points)*(total on/off time)
Resolution bandwidth:	1 MHz for U-NII-1/2A & 2C 500 kHz for U-NII-3
Video bandwidth:	≥ 3xRBW
Span:	> EBW
Trace mode:	Max hold
Used test setup:	See chapter 6.5 – A
Measurement uncertainty:	See chapter 8

Limits:

Power Spectral Density

power spectral density e.i.r.p. ≤ 10 dBm in any 1 MHz band (band 5150 – 5250 MHz)

power spectral density conducted \leq 11 dBm in any 1 MHz band (band 5250 – 5350 MHz) power spectral density conducted \leq 11 dBm in any 1 MHz band (band 5470 – 5725 MHz)

power spectral density conducted ≤ 30 dBm in any 500 kHz band (band 5725 – 5850 MHz)



Results:

	Power spe	ctral density (dBm/1MHz or dE	3m/500kHz)					
	U-NII-1 (5150 MHz to 5250 MHz)							
	Lowest channel	Middle channel	Highest channel					
	0.34	-0.05	-0.30					
	Radiated (calculated – see chapter antenna gain)							
	4.34	3.75	3.30					
2	U-NII-2A (5250 MHz to 5350 MHz)							
а	Lowest channel	Middle channel	Highest channel					
	-0.21	0.75	0.81					
	U-NII-2C (5470 MHz to 5725 MHz)							
	Lowest channel	Middle channel	Highest channel					
	3.12	0.71	0.39					
	l	U-NII-3 (5725 MHz to 5850 MHz)						
	Lowest channel	Middle channel	Highest channel					
	-1.46	-1.86	-0.78					

Results:

	Power spe	ctral density (dBm/1MHz or dB	3m/500kHz)						
	U-NII-1 (5150 MHz to 5250 MHz)								
	Lowest channel	Middle channel	Highest channel						
	Conducted								
	-1.41	-1.60	-1.84						
	Radiated (calculated – see chapter antenna gain)								
	2.59	2.20	1.76						
n/ac HT20	U-NII-2A (5250 MHz to 5350 MHz)								
11/20	Lowest channel	Middle channel	Highest channel						
	-1.71	-0.70	-0.81						
	U-NII-2C (5470 MHz to 5725 MHz)								
	Lowest channel	Middle channel	Highest channel						
	2.16	-0.32	-0.72						
	L	J-NII-3 (5725 MHz to 5850 MHz)							
	Lowest channel	Middle channel	Highest channel						
	-3.08	-3.17	-2.13						

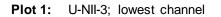


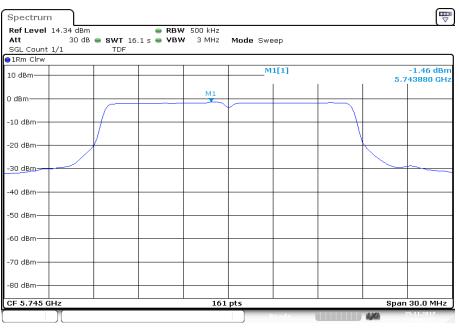
Results:

	Power spe	ctral density (d	Bm/1MHz or dB	3m/500kHz)			
	U-NII-1 (5150 MHz to 5250 MHz)						
	Lowest channel		Highest channel				
		Cond	ucted				
	-9.75			-9.91			
	Radiated	(calculated - se	ee chapter anter	nna gain)			
	-5.75		-6.31				
n/ac HT40	U-NII-2A (5250 MHz to 5350 MHz)						
	Lowest channel		Highest channel				
	-9.40		-8.56				
	U-NII-2C (5470 MHz to 5725 MHz)						
	Lowest channel	Middle	channel	Highest channel			
	-5.65	-6.	5.06 -7.52				
	L	J-NII-3 (5725 M	IHz to 5850 MHz)				
	Lowest channel		Highest channel				
	-9.32			-9.53			



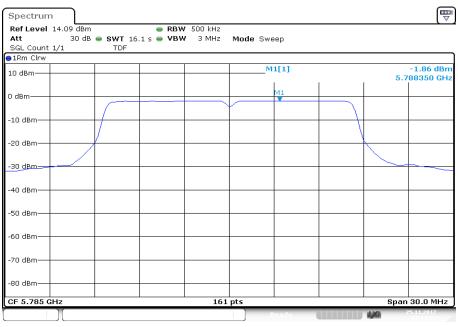
Plots: a - mode





Date: 25.NOV.2017 07:07:54

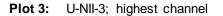
Plot 2: U-NII-3; middle channel

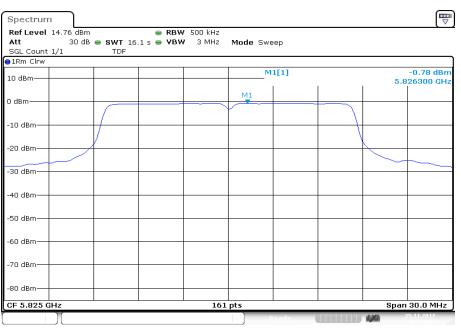


Date: 25.NOV.2017 07:11:02

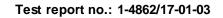








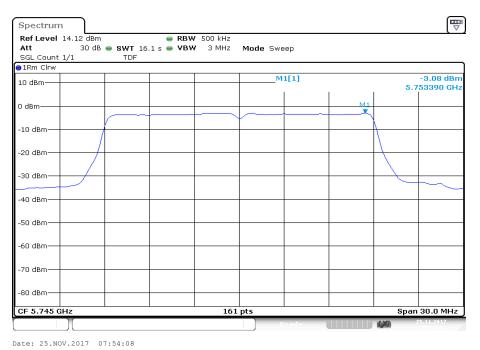
Date: 25.NOV.2017 07:13:57



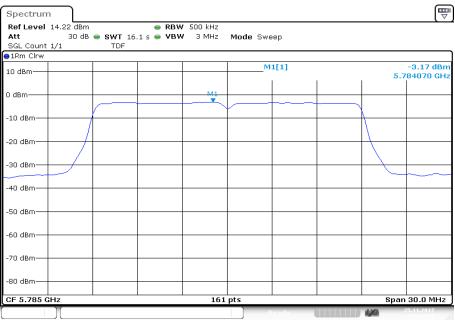


Plots: n/ac HT20 - mode

Plot 1: U-NII-3; lowest channel



Plot 2: U-NII-3; middle channel

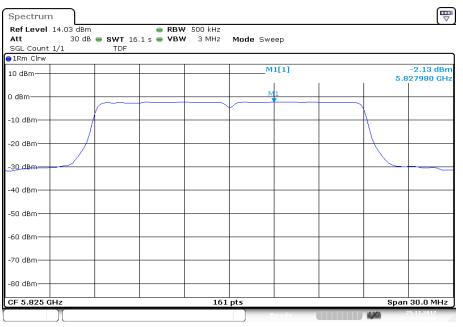


Date: 25.NOV.2017 07:57:58

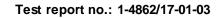




Plot 3: U-NII-3; highest channel

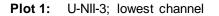


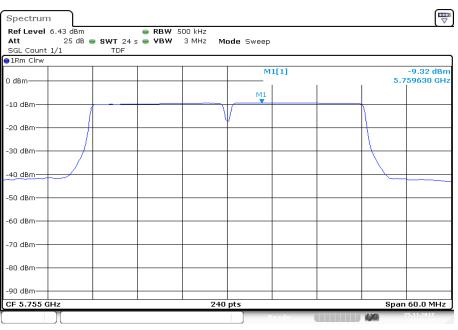
Date: 25.NOV.2017 08:01:20





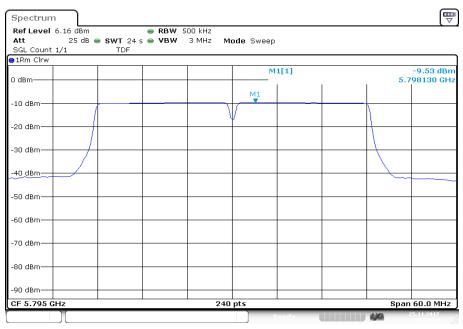
Plots: n/ac HT40 - mode





Date: 25.NOV.2017 08:26:02

Plot 2: U-NII-3; highest channel



Date: 25.NOV.2017 08:29:05



11.6 Minimum emission bandwidth for the band 5.725-5.85 GHz

Description:

Measurement of the 6 dB bandwidth of the modulated signal.

Measurement:

Measurement parameter				
According to: KD	B789033 D02, C.2.			
Detector:	Peak			
Sweep time:	Auto			
Resolution bandwidth:	100 kHz			
Video bandwidth:	300 kHz			
Span:	40 MHz			
Measurement procedure:	Using marker to find -6dBc frequencies			
Trace mode:	Max hold (allow trace to stabilize)			
Used test setup:	See chapter 6.5 – A			
Measurement uncertainty:	See chapter 8			

Limits:

FCC	IC				
The minimum 6 dB bandwidth shall be at least 500 kHz.					



Results:

	6 dB emission bandwidth (MHz)						
	U-NII-3 (5725 MHz to 5850 MHz)						
a	Lowest channel	Middle channel	Highest channel				
	16.60	16.57	16.60				

Results:

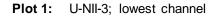
	6 dB emission bandwidth (MHz)						
n/ac HT20	U-NII-3 (5725 MHz to 5850 MHz)						
	Lowest channel	Middle channel	Highest channel				
	17.86	17.86	17.65				

Results:

6 dB emission bandwidth (MHz) U-NII-3 (5725 MHz to 5850 MHz)	6 dB emission b	ission bandwidth (MHz)			
	Hz to 5850 MHz)				
11/ac 1140	Lowest channel	Highest channel			
	36.68	36.68			



Plots: a - mode



Spectr	um											
Ref Lev	vel 1	9.34 dB	m	😑 RB1	V 100 kHz							
Att		35 c	B SWT 1 m	s 👄 VBN	N 300 kHz N	lode	Sweep					
SGL Co	unt 2	00/200	TDF									
●1Pk Ma	ах											
							M:	L[1]				-9.06 dBm
10 dBm-											5.7	367281 GH
					мз		MC	3[1]				-1.44 dBn
0 dBm—			Mount		_				Un Alla		5.7	423027 GH
			Manna	may war war	iteration (f) course	m	20-00 or 40	10 - NO- UD-	da. mada			
-10 dBm	-					10				4		
-20 dBm			al ^r							<u></u>		
-20 ubiii		wra/r									man .	W WWW day
BOVABIA	2000	unv ~									· myr	WWWW
-40 dBm	\rightarrow											
-50 dBm	-											-
-60 dBm												
-ou ubili												
-70 dBm												
, o abiii												
					100						L	
CF 5.74 /larker	FO GH	12			1001	t pts					ъра	n 30.0 MHz
	D -f	T un	×			- 1	F			F		
Type M1	Ref	Trc 1	X-value 5.73672		<u>Y-value</u> -9.06 dB	m	Funct	ion		Fun	ction Resu	IL
D2	M1	1		36 MHz	-9.00 02							
M3		1	5.74230		-1.44 dE							
M4		1	5.75333		-8.77 dE							
		1				1	_		611			25 11 2017

Date: 25.NOV.2017 07:05:36

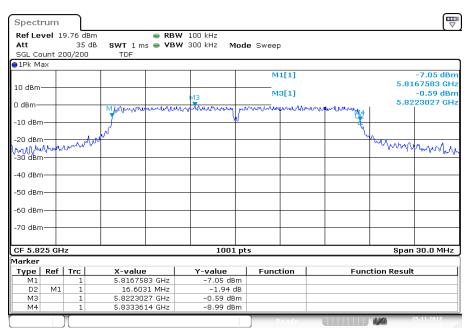
Plot 2: U-NII-3; middle channel

Spectrum									
Ref Level : Att	19.09 dB 35 c			100 kHz 300 kHz M (ode Swi	en			
SGL Count 2		TDF			Jue 0	500			
●1Pk Max									
						M1[1]			-7.72 dBm
10 dBm						-		5.77	767583 GHz
				мз		M3[1]			-1.32 dBm
0 dBm		Menerilagora		-	n non a chui		4Mmmmmml	5.78	323027 GHz
				and a current	000.000.000	Land the rest of Ann	www.www.www.		
-10 dBm							Ţ		
-20 dBm		- Mar					4		
-20 abm /zenabh	·	M						www.	
rzonastiw 4	hander					_		- POW	1 W Why U Lyon
-40 dBm									
-50 dBm									
-60 dBm									
oo abiii									
-70 dBm									
CF 5.785 G				1001	nte				30.0 MHz
Marker	12			1001	prs			эра	1 30.0 MHZ
	Trc	X-value	- 1	Y-value	1	nction	E	tion Result	
Type Ref M1	1	5.7767583	CH7	-7.72 dBr		nccion	Func	alon Kesun	L
D2 M1		16.5734		0.37 d					
M3	1	5.7823027		-1.32 dBr	-				
M4	1	5.7933317	GHz	-7.35 dBr	n				
	11					Boodu	7	4.961	25.11.2017
								and the second s	

Date: 25.NOV.2017 07:10:00



Plot 3: U-NII-3; highest channel

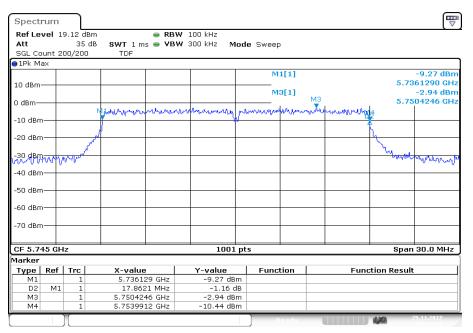


Date: 25.NOV.2017 07:12:54



Plots: n/ac HT20 - mode

Plot 1: U-NII-3; lowest channel



Date: 25.NOV.2017 07:52:40

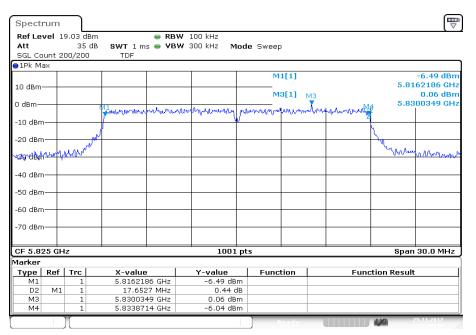
Plot 2: U-NII-3; middle channel

M3 M3[1] -2.60 dBn 0 dBm 10 dBm 5.7821527 GHz 5.7821527 GHz -10 dBm 10 dBm 10 dBm 10 dBm 10 dBm -20 dBm 10 dBm 10 dBm 10 dBm 10 dBm -20 dBm 10 dBm 10 dBm 10 dBm 10 dBm -20 dBm 10 dBm 10 dBm 10 dBm 10 dBm -30 dBm 10 dBm 10 dBm 10 dBm 10 dBm -60 dBm 10 dBm 10 dBm 10 dBm 10 dBm	Spectrum									Ē
SGL Count 200/200 TDF 91Pk Max -10.18 dBm 10 dBm M1[1] 0 dBm N3 0 dBm N3 -10 dBm N3 -20 dBm N3 -30 dBm -10.18 dBm -20 dBm -10 -50 dBm -10 -70 dBm -10 -70 dBm -10 -70 dBm -10.18 dBm D2 M1 1 5.7821527 GHz -20 dBm -2.60 dBm	Ref Level 1	9.22 dBr	m	👄 RBV	V 100 kHz					`
1 Pk Max -10.18 dBn 10 dBm M1[1] -10.18 dBn 0 dBm M3 M3[1] -2.60 dBn -10 dBm M3 M3[1] -2.60 dBn -20 dBm M3 M3[1] -2.60 dBn -20 dBm M3 M3[1] -2.60 dBn -20 dBm -30 dBm/m -40 dBm -40 dBm -40 dBm -50 dBm -60 dBm -60 dBm -60 dBm -60 dBm -60 dBm -70 dBm -70 dBm -70 dBm -70 101 pts Span 30.0 MHz Marker -70 101 pts Span 30.0 MHz M1 1 5.776129 GHz -10.18 dBm M1 1 5.776129 GHz -10.18 dBm M1 1 5.776129 GHz -10.18 dBm M3 1 5.781527 GHz -2.60 dBm				5 👄 VB1	V 300 kHz 🛛 M	ode Sw	еер			
10 dBm M1[1] -10.18 dBm 10 dBm M3[1] -2.60 dBm -10 dBm M3 M3[1] -2.60 dBm -20 dBm -20 dBm -20 dBm -20 dBm -50 dBm -20 dBm -20 dBm -20 dBm -60 dBm -20 dBm -20 dBm -20 dBm -70 dBm -20 dBm -20 dBm -20 dBm		00/200	TDF							
10 dBm	●1Pk Max									
10 dBm N3 M3[1] -2.60 dBm -10 dBm N3 M3[1] 5.7821527 GHz -10 dBm N3 M3[1] 5.7821527 GHz -20 dBm N3 N3 N3							M1[1]			
0 dBm	10 dBm						-		5	
0 0 0 mm 0 0 mm<					MB		M3[1]		-	
10 dBm 20 dBm 30 dBm 40 dBm 50 dBm 50 dBm 50 dBm 60 dBm 60 dBm 70 dBm 1001 pts 1001	0 dBm							من والبما		.7821527 GH2
-20 dBm	10.d0m		Mannan	www.	renterenter	homa	ad love of a diversion	An an an an and the	n and a second s	
30 dBm +	-10 ubiii					, and the second s			4.	
30 dBm +	-20 dBm									
40 dBm -50 dBm -50 dBm -60 dBm -70		کم	•						1	
40 dBm -50 dBm -50 dBm -60 dBm -70	-30,d8mm	Mohral								Valor March and I
-50 dBm -60 dBm -70									Ť	a concourted
-60 dBm	-40 dBm									
-60 dBm										
To dBm Image: constraint of the second	-50 aBm									
To dBm Image: constraint of the second	-60 dBm									
CF 5.785 GHz 1001 pts Span 30.0 MHz Arrker Type Ref Trc X-value Function Function Result M1 1 5.776129 GHz -10.18 dBm - - - D2 M1 1 17.8621 MHz -0.90 dB - - - M3 1 5.7821527 GHz -2.60 dBm - - -	00 00 00									
Marker Type Ref Trc X-value Y-value Function Function Result M1 1 5.776129 GHz -10.18 dBm D2 M1 1 17.8621 MHz -0.90 dB M3 1 5.7821527 GHz -2.60 dBm	-70 dBm									
Marker Type Ref Trc X-value Y-value Function Function Result M1 1 5.776129 GHz -10.18 dBm D2 M1 1 17.8621 MHz -0.90 dB M3 1 5.7821527 GHz -2.60 dBm										
Marker Type Ref Trc X-value Y-value Function Function Result M1 1 5.776129 GHz -10.18 dBm D2 M1 1 17.8621 MHz -0.90 dB M3 1 5.7821527 GHz -2.60 dBm	CE 5 785 CH	17			1001	nts			Sr	an 30.0 MHz
Type Ref Trc X-value Y-value Function Function Result M1 1 5.776129 GHz -10.18 dBm					1001	pes				
M1 1 5.776129 GHz -10.18 dBm D2 M1 1 17.8621 MHz -0.90 dB M3 1 5.7821527 GHz -2.60 dBm		Trc	X-value	1	Y-value	Fi	Inction	F	unction Res	ult
D2 M1 1 17.8621 MHz -0.90 dB M3 1 5.7821527 GHz -2.60 dBm										
	D2 M1	1								
M4 1 5.7939912 GHz -11.09 dBm 25.11.2017	MЗ	1	5.782152	27 GHz						
Peady 25.11.2017	M4	1	5.79399:	L2 GHz	-11.09 dB	m				
		1					Ready		100	25.11.2017

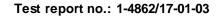
Date: 25.NOV.2017 07:56:39



Plot 3: U-NII-3; highest channel



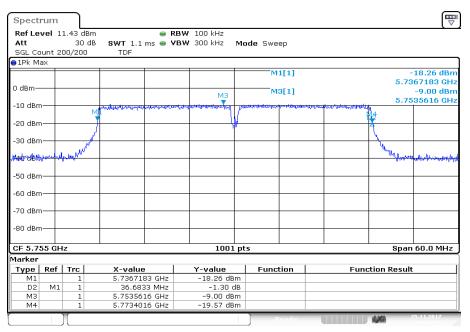
Date: 25.NOV.2017 08:00:19





Plots: n/ac HT40 - mode

Plot 1: U-NII-3; lowest channel



Date: 25.NOV.2017 08:24:53

Plot 2: U-NII-3; highest channel

Ref Level 1 Att SGL Count 2	1.16 dBm 30 dB							∇
	30 dB		RBW 100 kHz					
SGL Count 2		SWT 1.1 ms 👄	VBW 300 kHz	Mode Swe	ер			
	200/200	TDF						
∋1Pk Max								
				M	1[1]			19.63 dBm
					0141		5.77	67183 GHz
				M	3[1] M3		E 00	-9.13 dBm 127924 GHz
-10 dBm		www.water.com	and the second of the second o	borrowing desparts	por Vange	Mar	3.60	27924 GHZ
	M	}		M		1	12	
-20 dBm				P			†	
-30 dBm	1						٦.	
-30 ubiii							N.	
40000000000	barghlal ^{AD}						<u>USS USA</u>	what we are a star
								1
-50 dBm								-
-60 dBm								
-70 dBm								
-/0 ubiii								
-80 dBm								
CF 5.795 GH	lz	II	1001	l pts			Span	60.0 MHz
Marker								
	Trc	X-value	Y-value	Func	tion	Func	tion Result	. 1
M1	1	5.7767183 GHz	-19.63 dB					
D2 M1	. 1	36.6833 MHz						
MЗ	1	5.8027924 GHz						
M4	1	5.8134016 GHz	-18.26 dB	sm				
					Ready		100	25.11.2017

Date: 25.NOV.2017 08:27:55



11.7 Spectrum bandwidth / 26 dB bandwidth

Description:

Measurement of the 26 dB bandwidth of the modulated signal.

Measurement:

Measureme	nt parameter
According to: KD	B789033 D02, C.1.
Detector:	Peak
Sweep time:	Auto
Resolution bandwidth:	1% EBW
Video bandwidth:	≥ RBW
Span:	> Complete signal
Trace mode:	Max hold
Used test setup:	see chapter 6.5 – A
Measurement uncertainty:	see chapter 8

Limits:

Spectrum Bandwidth – 26 dB Bandwidth

IC: Any unwanted emissions that fall into the band 5250-5350 MHz shall be attenuated below the channel power by at least 26 dB, when measured using a resolution bandwidth between 1 and 5% of the occupied bandwidth (i.e. 99% bandwidth), above 5250 MHz. The 26 dB bandwidth mayfall into the 5250-5350 MHz band; however, if the occupied bandwidth also falls within the 5250-5350 MHz band, the transmission is considered as intentional and the devices shall comply with all requirements in the band 5250-5350 MHz including implementing dynamic frequency selection (DFS) and TPC, on the portion of the emission that resides in the 5250-5350 MHz band.

FCC: Radar Detection Function of Dynamic Frequency Selection (DFS). U-NII devices operating with any part of its 26 dB emission bandwidth in the 5.25-5.35 GHz and 5.47-5.725 GHz bands shall employ a DFS radar detection mechanism to detect the presence of radar systems and to avoid co-channel operation with radar systems.



Results:

		26 dB band	width (MHz)		
	L	J-NII-1 (5150 M	Hz to 5250 MHz		
	Lowest channel	Middle	channel	Highest channel	
	20.23	20	.68	20.33	
	Lowest frequency	/	Highest frequency		
	5170.0100	5250.040			
	U	z)			
	Lowest channel	Middle	Highest channel		
а	20.18	23	.08	24.48	
	U	-NII-2C (5470 M	IHz to 5725 MHz	z)	
	Lowest channel	Middle	channel	Highest channel	
	34.22	25	.03	23.33	
	L	J-NII-3 (5725 MI	Hz to 5850 MHz		
	Lowest channel	Middle	channel	Highest channel	
	32.87	32	.12	34.97	
	Lowest frequency	1	ł	lighest frequency	
	5728.916			5843.282	

Note: For DFS see report 1-4862/17-01-04



Results:

		26 dB band	width (MHz)		
	L	J-NII-1 (5150 MI	Hz to 5250 MHz		
	Lowest channel	Middle	channel	Highest channel	
	20.78	20	.58	20.88	
	Lowest frequency	/	lighest frequency		
	5169.760			5250.440	
	U	U-NII-2A (5250 MHz to 5350 MHz)			
	Lowest channel	Middle	channel	Highest channel	
n/ac HT20	20.88	20	.63	20.63	
	U	-NII-2C (5470 M	IHz to 5725 MHz	z)	
	Lowest channel	Middle	channel	Highest channel	
	31.27	20	.83	20.68	
	L	J-NII-3 (5725 MI	Hz to 5850 MHz		
	Lowest channel	Middle	channel	Highest channel	
	25.82	24.63		32.87	
	Lowest frequency	/	F	lighest frequency	
	5734.111			5842.932	

Note: For DFS see report 1-4862/17-01-04

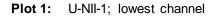


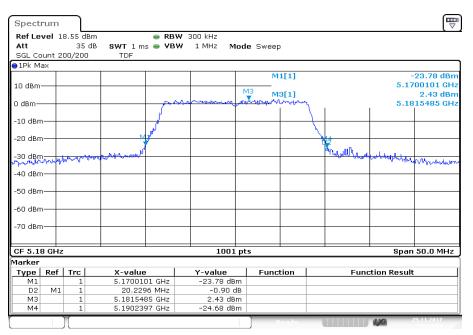
Results:

		26 dB band	width (MHz)		
	L	J-NII-1 (5150 MI	Hz to 5250 MHz		
	Lowest channel			Highest channel	
	41.46			41.56	
	Lowest frequency	,	ŀ	lighest frequency	
	5169.320			5250.979	
	U	2)			
	Lowest channel		Highest channel		
n/ac HT40	41.46			41.66	
	Ú	-NII-2C (5470 M	Hz to 5725 MHz	2)	
	Lowest channel	Middle	channel	Highest channel	
	41.56	41	.46	41.56	
	L	J-NII-3 (5725 MI	Hz to 5850 MHz		
	Lowest channel			Highest channel	
	41.36	41.56			
	Lowest frequency	F	Highest frequency		
	5734.421			5815.879	



Plots: a - mode





Date: 25.NOV.2017 06:29:24

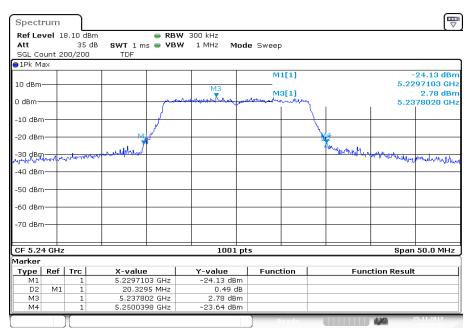
Plot 2: U-NII-1; middle channel

Spectrum					R
Ref Level 17.97 dBm	🖷 RBW	' 300 kHz			
Att 35 dB	SWT 1 ms 👄 VBW	1 MHz Mod	e Sweep		
SGL Count 200/200	TDF				
●1Pk Max					
			M1[1]		-26.86 dBr
10 dBm					5.1896602 GH
			M3[1]		1.62 dBr
0 dBm	for aller	hallow water a free	- Marine - A Marine	λ.	5.2048451 GH
10 10-	∮			1	
-10 dBm	1				
-20 dBm	اس				
20 0011	M			12 N	
-30 dBm	marchalaphal			400 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	and the manufacture of the second
-30 dBm					101000000 Marchall
-40 dBm					
-50 dBm					
-60 dBm					
-70 dBm					
-/0 ubiii					
					_
CF 5.2 GHz		1001 pt	s		Span 50.0 MHz
4arker					
Type Ref Trc	X-value	Y-value	Function	Fu	nction Result
M1 1	5.1896602 GHz	-26.86 dBm			
D2 M1 1	20.6797 MHz	1.48 dB			
M3 1	5.2048451 GHz	1.62 dBm			
M4 1	5.2103398 GHz	-25.38 dBm			
			Ready		25.11.2017

Date: 25.NOV.2017 06:51:34



Plot 3: U-NII-1; highest channel



Date: 25.NOV.2017 06:32:21

Plot 4: U-NII-2A; lowest channel

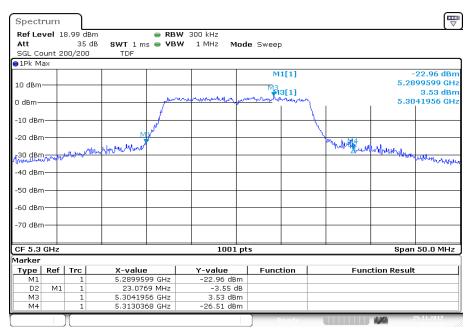
Spectrum	ı)					
Ref Level	18.67 dE	3m 🖷 R	BW 300 kHz			· · · ·
Att	35 (dB SWT 1 ms 👄 V	BW 1 MHz Mo	ode Sweep		
SGL Count	200/200	TDF				
⊖1Pk Max						
				M1[1]		-23.64 dBm
10 dBm						5.2499599 GH
				M33[1]		2.63 dBm
0 dBm			mannon	and the set of the second	~~	5.2641956 GH
			ľ			
-10 dBm						
		and the second			NL -	
-20 dBm					<u> </u>	
		man Munty			Mar Walaking Bar	haddenplower to any allowing
-30 dBm	Mar and	Onder and Apply and the Local of the			- IK Selfe	water and a fair and the second a fair of the secon
· ··						
-40 dBm-						
-50 dBm						
-30 ubiii						
-60 dBm						
oo abiii						
-70 dBm						
CF 5.26 GF	lz		1001	pts		Span 50.0 MHz
Marker						
Type Ref	f Trc	X-value	Y-value	Function	Fi	Inction Result
M1	1	5.2499599 GHz				
D2 M		20.18 MHz				
M3	1	5.2641956 GHz				
M4	1	5.2701399 GHz	-23.59 dBr	n		
	1			Deady		25.11.2017
						06:39:10

Date: 25.NOV.2017 06:39:18





Plot 5: U-NII-2A; middle channel



Date: 25.NOV.2017 06:54:18

Plot 6: U-NII-2A; highest channel

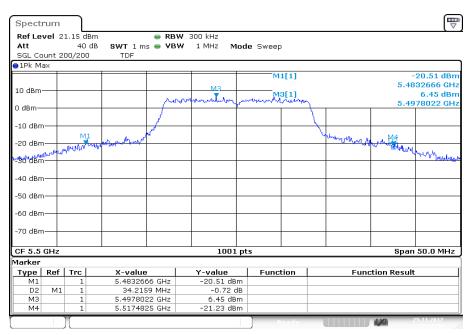
Spectrur	n												
Ref Level	18.92 0	dBm			RBW	300 kHz							
Att	35	idB s	SWT 1 ms	5 👄	vbw	1 MHz	Mode	e Sweep					
SGL Count	: 200/20	0	TDF										
∋1Pk Max													
								M	1[1]				-22.99 dBm
10 dBm								M3				5.3	077622 GH
								white	3[1]				3.82 dBn
0 dBm					proversion	an mound	Mar and	WWWWWWWWW	1 million	۱		5.3	242455 GH
				- f						ι.			
-10 dBm—				8						1			
-20 dBm			M1	£						<u> </u>	MA		
-20 uBm -30 dBm			. • N• M								MAA	1 A	hat we then the start
-30 dBm	ىلى مەلەرىيى مەلەرىي	Jb Brand	pro onto								- ~ VWV4	Jumes	
what when the fight	**												martiner
-40 dBm—													
-50 dBm—													
-60 dBm													
-00 060													
-70 dBm—													
CF 5.32 G												0	- 50 0 MU-
	HZ						001 pt	5				spar	n 50.0 MHz
Marker	() -	1	× 1		-						-		
Type Re M1	f Trc		X-value 5.307762		17	<u>Y-value</u> -22.99		Fund	tion		Fund	tion Resul	τ
	<u> </u>		24.475				22 dB						
M3	1 1		5.324245				dBm						
M4	1		5.332237			-22.76							
	7							1				18.3478	25.11.2017
												140	

Date: 25.NOV.2017 06:48:30





Plot 7: U-NII-2C; lowest channel



Date: 25.NOV.2017 06:57:40

Plot 8: U-NII-2C; middle channel

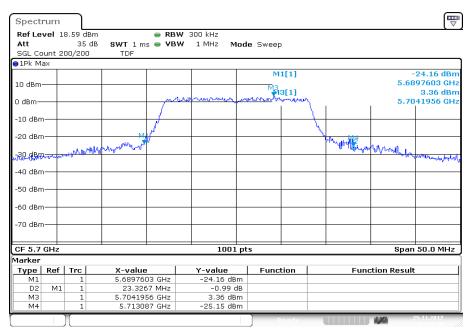
Spectrum											
RefLevel 1	9.67 dBm		RBW	300 kHz							
Att	35 dB	SWT 1 ms	VBW	1 MHz	Mode	sweep					
SGL Count 2	00/200	TDF									
∋1Pk Max											
						M1	L[1]				23.10 dBn
10 dBm					—					5.58	80120 GH
						Mena	3[1]				3.23 dBn
0 dBm			mm	neontena	2 m	month	mour	1		5.60	40960 GH
			1					1			
-10 dBm			1	+							
00 dB		M1 🖋						1			
-20 dBm		A A A A			-				Mr. Arth		
-30 dBm	June 10	Melen my men							wind the word	Will when	1.00
phone with the man	,										and a prover
-40 dBm					—						
-50 dBm				+							
-60 dBm											
-70 dBm											
-/0 uBiii											
CF 5.6 GHz				100)1 pts	5				Span	50.0 MHz
Marker											
Type Ref		X-value		Y-value		Funct	ion		Fund	tion Result	
M1	1	5.588012		-23.10 (
D2 M1	1	25.025		-2.01							
M3 M4	1	5.604096 5.6130371		-25.11 (
1414		5.0130371	GEZ	-25.11 (<u></u>		_			
	Л					R		1		4,70	2571112017

Date: 25.NOV.2017 07:00:09





Plot 9: U-NII-2C; highest channel



Date: 25.NOV.2017 07:02:40

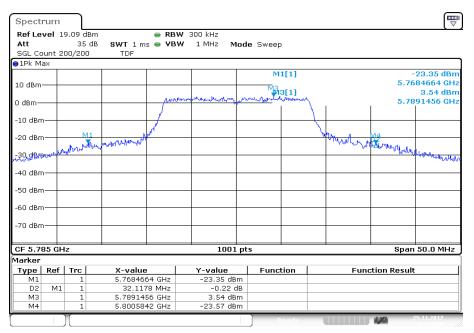
Plot 10: U-NII-3; lowest channel

Spectrum)						
Ref Level 19.34	dBm	👄 RBW 300 k	Hz				
Att 3	35 dB SWT 1 i	ns 👄 VBW 🛛 1 M	1Hz Mode Swe	ер			
SGL Count 200/2	00 TDF						
1Pk Max							
				M1[1]			21.94 dBn
10 dBm				13		5.72	89160 GH
			mprogramming	3 13[1]			4.34 dBr
0 dBm		grander	where the server	manny		5.74	91958 GH
		l j l					
-10 dBm		1					
-20 dBm	M1	. N			Man Marken	MA Marinathy	
-20 0000	man man man	M			" HOY YUNY	Maxim 1	
-20 dBm	<i>vv</i>			_		The Prof	Administra
10 York 10 - 0							- Intrate
-40 dBm							
-50 dBm							
-60 dBm							
-70 dBm					++		
CF 5.745 GHz			1001 pts			Snan	50.0 MHz
1arker							
Type Ref Tro	: X-valu	e Y-1	alue Fur	nction	Funct	ion Result	
			1.94 dBm		Tunce	ion Kesult	
		573 MHz	-0.62 dB				
			4.34 dBm				
M4	1 5.7617	333 GHz -2	2.56 dBm				
				Peady		1.00	5.11.2017

Date: 25.NOV.2017 07:05:06



Plot 11: U-NII-3; middle channel



Date: 25.NOV.2017 07:09:30

Plot 12: U-NII-3; highest channel

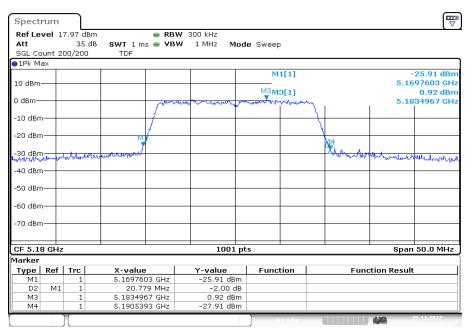
Spectrum					ſ
Ref Level 19.76 dBr	m 🖷 RB	W 300 kHz			
Att 35 d	B SWT 1 ms 👄 VB	W 1 MHz Mod	le Sweep		
SGL Count 200/200	TDF				
∋1Pk Max					
			M1[1]		-24.74 dB
10 dBm			₩3		5.8083169 G
		remained in	₩ 13[1]		4.82 dB
0 dBm	port -	and and a contraction of the	and the second character	<u>}</u>	5.8291958 G
				γ	
-10 dBm	/				
-20 dBm	and the second			Mr. INA	MA MA
-20 aBm	Alwaper Low			· San A al al an	hor man the second s
-20 der and a second					Month lade
JAN MOUT					
-40 dBm					
-50 dBm					
-60 dBm					
-70 dBm					
-70 UBIII					
CF 5.825 GHz		1001 pt	ts		Span 50.0 MH
Marker					
Type Ref Trc	X-value	Y-value	Function	Fund	ction Result
M1 1	5.8083169 GHz	-24.74 dBm			
D2 M1 1	34.965 MHz	3.20 dB			
M3 1 M4 1	5.8291958 GHz 5.8432819 GHz	4.82 dBm -21.55 dBm			
1014 1	5.8432819 GHZ	-21.55 dBm			
Π			Ready		25.11.2017

Date: 25.NOV.2017 07:12:25



Plots: n/ac HT20 - mode

Plot 1: U-NII-1; lowest channel



Date: 25.NOV.2017 07:18:22

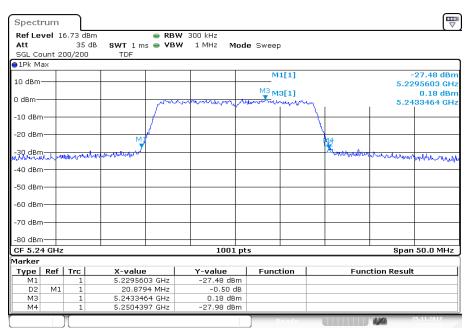
Plot 2: U-NII-1; middle channel

Spectrur	n							
Ref Level Att SGL Count	35	dB SWT 1 ms 👄	RBW 300 kHz VBW 1 MHz	Mode	Sweep			
●1Pk Max								
10 dBm					M1[1]			-25.36 dBn 898102 GH: 0.68 dBn
0 dBm			manner				5.2	034964 GH
-10 dBm—								
-20 dBm—		- ME						
-30 dBm	heller	trans and the start of the star				A Water	ulwalkownik	N MM MAN
-40 dBm—								
-50 dBm								
-60 dBm				_				
-70 dBm				_				
CF 5.2 GH	7			01 pts			Snai	n 50.0 MHz
Marker	-			pts			000	
Type Re	ef Trc	X-value	Y-value	. 1	Function	1 =	unction Resul	l+
M1	1	5,1898102 G			anction		anction Resul	n.
	11 1	20.5793 MI		7 dB				
M3	1	5.2034964 G		dBm				
M4	1	5.2103895 G	Hz -27.03	dBm				
					Ready		4,70	25.11.2017 07:20:50

Date: 25.NOV.2017 07:20:50

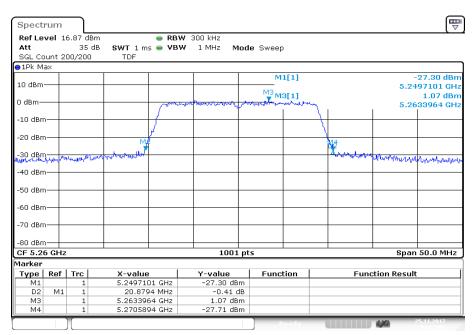


Plot 3: U-NII-1; highest channel



Date: 25.NOV.2017 07:23:19

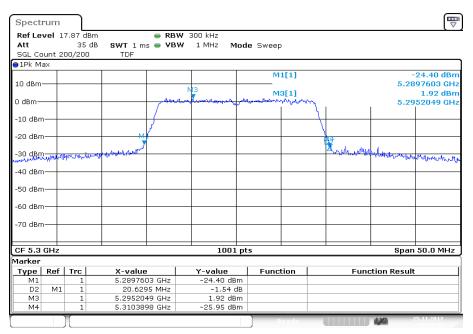
Plot 4: U-NII-2A; lowest channel



Date: 25.NOV.2017 07:27:06

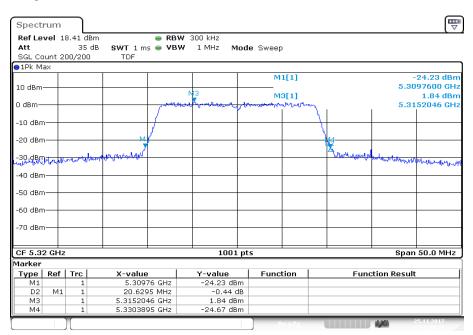


Plot 5: U-NII-2A; middle channel



Date: 25.NOV.2017 07:29:54

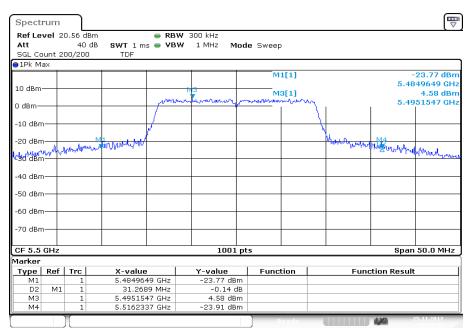
Plot 6: U-NII-2A; highest channel



Date: 25.NOV.2017 07:39:11



Plot 7: U-NII-2C; lowest channel



Date: 25.NOV.2017 07:41:34

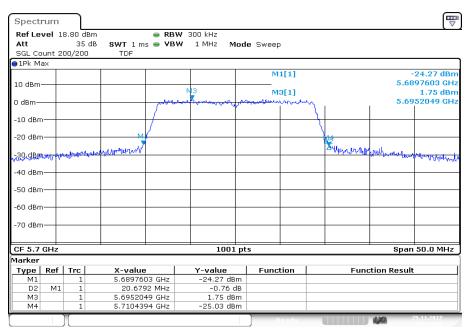
Plot 8: U-NII-2C; middle channel

Ref Level : Att	18 83 dB										
Att	10.00 00	m	🖷 RB1	V 300 kHz							``
muu -	35 d	B SWT 1 ms	5 👄 VB1	N 1 MHz N	1ode	Sweep					
SGL Count 2	200/200	TDF									
1Pk Max											
						M:	1[1]				-25.43 dBm
10 dBm					_					5.	5895603 GHz
				MЗ		M	3[1]				2.09 dBm
0 dBm			المصاصر	ward the state of the second	ليحير		mou	m .		5.	5952046 GHz
			1					- \			
-10 dBm			1					1			
00 d0			1					<u>}</u>			
-20 dBm		M.						t	¥		
-20 dBm-1-4		wooden wall							auguna and	Almenan	allementation
3906 mm	Muniter.	-orpert in									montelphone
-40 dBm											
-50 dBm —											-
-60 dBm											
70 40-4											
-70 dBm											
CF 5.6 GHz				100	1 pts	;				Spa	an 50.0 MHz
1arker											
Type Ref	Trc	X-value		Y-value		Funct	tion		Fun	iction Resi	ılt
M1	1	5.589560	3 GHz	-25.43 di	3m						
D2 M1		20.829		0.98							
MЗ	1	5.595204		2.09 di							
M4	1	5.610389	95 GHz	-24.45 di	3m						
						R	eadv	1		1.26	25.11.2017

Date: 25.NOV.2017 07:46:07



Plot 9: U-NII-2C; highest channel



Date: 25.NOV.2017 07:49:28

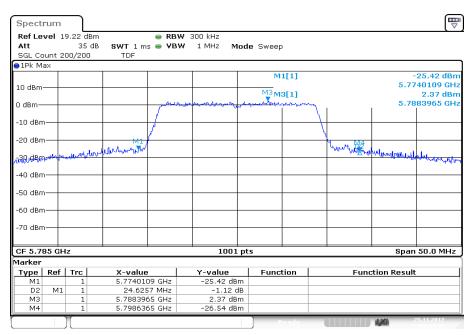
Plot 10: U-NII-3; lowest channel

Spectrum								Ē
Ref Level 19.	.12 dBm	e RB	W 300 kHz					
Att	35 dB	SWT 1 ms 👄 VB	W 1 MHz Mo	de Sweep				
SGL Count 200	0/200	TDF						
∋1Pk Max								
				M1	[1]		-	25.67 dBn
10 dBm							5.73	41107 GH
			r i		8[1]			1.94 dBr
0 dBm —		- Contraction of the Contraction	Mon Blundana	, Areal. and an	mound		5.74	57992 GH
-10 dBm								
		/			· · · · ·			
-20 dBm		M1				Sec. 1	2	
-20 dBm 	Jun man the	Millimpier				and representing	t the south of the second s	abs
- AACH BUNG And and								a a markathradi
-40 dBm								
10 ubiii								
-50 dBm								
-60 dBm								
-70 dBm								
CF 5.745 GHz			1001	pts		1	Span	50.0 MHz
/larker								
	Trc	X-value	Y-value	Funct	ion	Fund	tion Result	
M1	1	5.7341107 GHz	-25.67 dBr			- Tune	alon Result	
D2 M1	1	25.8243 MHz	0.38 di					
M3	1	5.7457992 GHz	1.94 dBr					
M4	1	5.759935 GHz	-25.29 dBr	n				
	ſ						4.562	5.11.2017
	L			Re			1.01	

Date: 25.NOV.2017 07:52:11



Plot 11: U-NII-3; middle channel



Date: 25.NOV.2017 07:56:09

Plot 12: U-NII-3; highest channel

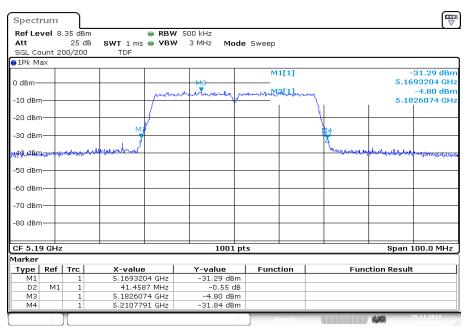
Spectrum											ſ
Ref Level 1	.9.03 dBm		RBW	300 kHz							``
Att	35 dB	SWT 1 ms 👄	vbw	1 MHz	Mode	Sweep)				
SGL Count 2	00/200	TDF									
∋1Pk Max											
						M	1[1]				-23.90 di
10 dBm											5.8100649 G
					M3	M	3[1]				2.83 di
0 dBm		1 1	whill the re	man	n and a second	all and the second second	mark	η.			5.8257992 G
								$-\lambda$			
-10 dBm								- 1			
-20 dBm		Mi P						۱. N		M.	1 marthagentuck
-20 UBIII		Ma Muran watter							Why you	Malan M	2
-30-demonutor	M Calman	4.000 V V							• •	*****¥4J4	What what when a strate of the state of the
-40 dBm											
-50 dBm —				_							
-60 dBm											
-70 dBm											
-/0 ubiii											
CF 5.825 GH	łz			10	01 pts	;				S	pan 50.0 MF
/larker											
Type Ref	Trc	X-value		Y-value		Func	tion		Fu	nction Re	sult
M1	1	5.8100649 GH		-23.90							
D2 M1		32.8673 MH		-0.7							
M3	1	5.8257992 GH		2.83							
M4	1	5.8429322 GH	lz	-24.65	dBm						
						P	eady	1		1,00	25.11.2017

Date: 25.NOV.2017 07:59:50



Plots: n/ac HT40 - mode

Plot 1: U-NII-1; lowest channel



Date: 25.NOV.2017 08:04:41

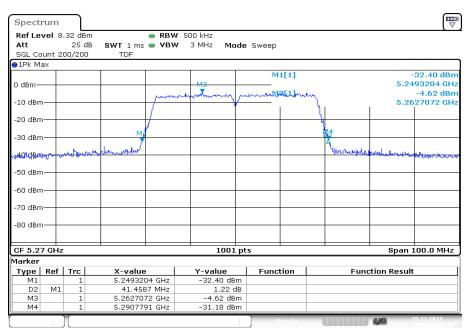
Plot 2: U-NII-1; highest channel

Ref Level 8.24 dBm RBW 500 kHz Att 25 dB SWT 1 ms VBW 3 MHz Mode Sweep SGL Count 200/200 TDF -32.46 dBm 5.2094208 GHz -50.5 dBm 1Pk Max 0 dBm	Spectru	um											
SGL Count 200/200 TDF IPk Max MI[1] -32.46 dBm 0 dBm MI[1] -32.46 dBm -5.05 dBm -10 dBm -5.05 dBm -5.05 dBm -5.05 dBm -20 dBm MI[1] -5.05 dBm -5.05 dBm -30 dBm MI -4.44 -4.44 -30 dBm -4.44 -4.44 -4.44 -50 dBm -4.44 -4.44 -4.44 -60 dBm -4.44 -4.44 -4.44 -70 dBm -4.44 -4.44 -4.44 -80 dBm -4.44 -4.44 -4.44 -80 dBm -4.44 -4.44 -4.44 -9.46 dBm -9.46 dBm -9.46 dBm -4.44	Ref Lev	el 8	.24 dBm		● RBW	/ 500 kHz							`
• 1Pk Max -32.46 dBm 0 dBm -32.46 dBm -10 dBm -5.05 dBm -20 dBm -5.05 dBm -30 dBm -10 dBm -50 dBm -10 dBm -50 dBm -10 dBm -60 dBm -10 dBm -70 dBm -10 dBm -80 dBm -1001 pts Span 100.0 MHz Varker -32.46 dBm Type Ref Trc X-value Y-value Function M1 1 5.202408 GHz -32.46 dBm -32.46 dBm M1 1 5.202402 GHz -32.46 dBm -32.46 dBm M3 1 5.202402 GHz -32.46 dBm -32.46 dBm M3 1	Att		25 dB	SWT 1 ms	VBW	J 3 MHz Mi	ode	Sweep					
0 dBm M1[1] -32.46 dBm -10 dBm 5.2094208 GHz -5.05 dBm -20 dBm M1 5.2227072 GHz -30 dBm M1 M1 -30 dBm M1 M1 -20 dBm M1 M1 -30 dBm -32 46 dBm -30 dBm -30 46 dBm -30 dBm -3	SGL Cou	nt 2	00/200	TDF									
0 dBm M3 5.2094208 GHz 5.05 dBm 5.227072 GHz 5.2227072 GHz 5.227072 GHz5.227072 GHz5.227072 GHz5.227072 GHz	●1Pk Ma	<											
0 dBm M3 5.2094208 GHz 5.05 dBm 5.2227072 GHz 6.0 dBm M4								M	1[1]				-32.46 dBm
-10 dBm	0 dBm—					M3						5.20	94208 GHz
-10 dBm							mate	month	3[1]				-5.05 dBm
-30 dBm	-10 dBm-						1		1	٣٢.		5.22	227072 GHz
-30 dBm					1					- 1			
	-20 dBm-	-			1								
				M	r -						44		
-50 dBm	-30 dBm-										¥		
-50 dBm				and an subscript							A marginal st.	the states	
-60 dBm	CHARLING BARRING	- Andrews	foregraph-u	CONTRACTOR OF DE								2. 2. 2. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	for the property of
-60 dBm	50 d9m-												
-70 dBm	-30 ubm-												
-70 dBm	-60 dBm-												
BO dBm Image: Constraint of the second	00 00												
CF 5.23 GHz 1001 pts Span 100.0 MHz Marker Type Ref Trc X-value Function Function Result M1 1 5.2094208 GHz -32.46 dBm - - D2 M1 1 41.558 MHz -0.66 dB - - M3 1 5.2227072 GHz -5.05 dBm - - -	-70 dBm-												
CF 5.23 GHz 1001 pts Span 100.0 MHz Marker Type Ref Trc X-value Function Function Result M1 1 5.2094208 GHz -32.46 dBm - - D2 M1 1 41.558 MHz -0.66 dB - - M3 1 5.2227072 GHz -5.05 dBm - - -													
Marker Type Ref Trc X-value Function Function Result M1 1 5.2094208 GHz -32.46 dBm -	-80 dBm-	_											
Marker Type Ref Trc X-value Function Function Result M1 1 5.2094208 GHz -32.46 dBm -													
Marker Type Ref Trc X-value Function Function Result M1 1 5.2094208 GHz -32.46 dBm -		<u> </u>					E_					<u> </u>	
Type Ref Trc X-value Y-value Function Function Result M1 1 5.2094208 GHz -32.46 dBm - <td></td> <td>GHZ</td> <td></td> <td></td> <td></td> <td>1001</td> <td>. pts</td> <td></td> <td></td> <td></td> <td></td> <td>Span</td> <td>100.0 MHz</td>		GHZ				1001	. pts					Span	100.0 MHz
M1 1 5.2094208 GHz 32.46 dBm D2 M1 1 41.558 MHz -0.68 dB M3 1 5.2227072 GHz -5.05 dBm													
D2 M1 1 41.558 MHz -0.68 dB M3 1 5.2227072 GHz -5.05 dBm -		Ref						Funct	tion		Fund	tion Result	t
M3 1 5.2227072 GHz -5.05 dBm													
		M1											
M4 1 5.2509788 GHz -33.14 dBm Bendy 25.11.2017													
Ready 25.11.2017	M4		1	5.250971	38 GHz	-33.14 dE	m						
								R	eady	1		4,261	25.11.2017

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Plot 3: U-NII-2A; lowest channel



Date: 25.NOV.2017 08:09:32

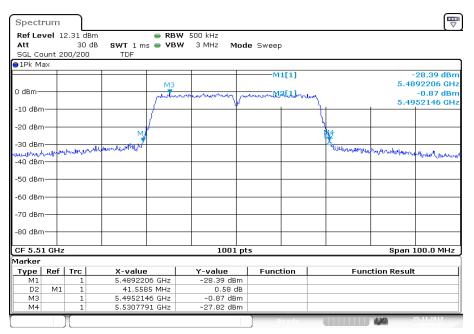
Plot 4: U-NII-2A; highest channel

Spectr	um											
Ref Lev	el 8	.98 dBi	m	RBW	500 kHz							
Att		25 d	B SWT 1 ms	VBW	3 MHz Mo	de 9	Sweep					
SGL Cou	int 2	00/200	TDF									
∋1Pk Ma	x											
							M:	1[1]			-	32.38 dBm
0 dBm	_				M3	<u> </u>					5.28	92206 GHz
				ream	unminnen	m	mm	alilw	han			-3.76 dBm
-10 dBm-						۲	— .		<u>}</u> .		5.30	28070 GHz
				1		ĺ						
-20 dBm-				/		<u> </u>						
-30 dBm-			M	<u>.</u>		ĺ			14			
			, y						Ą			
-40ndBm	- 4.00	سايحسرتهم	Hortheway work to the						Wyorkers	hondersto	Halan Makara	Law Westerner alt
Wind	1.	1.1										
-50 dBm-	_					<u> </u>						
						ĺ						
-60 dBm-												
						ĺ						
-70 dBm-												
-80 dBm-						ĺ						
-00 00111						ĺ						
CF 5.31	GHz				1001	. pts					Span 1	100.0 MHz
Marker												
	Ref	Trc	X-value		Y-value		Funct	tion		Functio	n Result	
M1		1	5.289220		-32.38 dB							
D2	M1	1	41.658		2.00 (
M3		1	5.3028		-3.76 dB							
M4		1	5.3308	'9 GHZ	-30.38 dB	m						
							R	e a d y		- 4	K)	25.11.2017

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Plot 5: U-NII-2C; lowest channel



Date: 25.NOV.2017 08:15:33

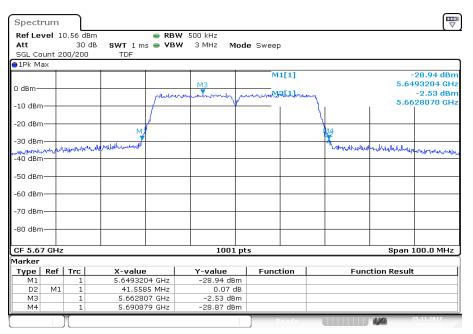
Plot 6: U-NII-2C; middle channel

Spect	rum											l □ □
Ref Le	vel 1	1.35 d	Bm	👄 RBV	V 500 kHz							•
Att		30	dB SWT 1 m	s 👄 VBV	V 3 MHz M	iode	Sweep					
SGL Co	ount 2	00/200	D TDF									
😑 1Pk M	ах											
							M:	L[1]				-27.95 dBn
					M3						5	i.5694208 GH
0 dBm—				man	moundy	m	maple	REJ.L	my			-1.24 dBn
-10 dBm					1	r					5	5.5880018 GH
-10 001	'			17					- {			
-20 dBrr	∩——			/								
			M	ł						¥‡		
-30 dBm	- +−									4		
Murphon	marthmen	withermyte	and the make the way							PD-17UMM/1	higher advantaged	handruskenplach
-40 dBm	+-ו											
-50 dBr	ד י											
-60 dBm												
-00 081	'											
-70 dBm	∩										_	
	·											
-80 dBm	n—————————————————————————————————————										_	
CF 5.5	9 GHz	2	·		1001	pts					Sp	an 100.0 MHz
Marker												
Type	Ref	Trc	X-value	.	Y-value	1	Funct	ion	1	Fu	nction Re:	sult
M1		1	5.56942		-27.95 dB	m						
D2	M1	1	41.45	32 MHz	0.61 (
MЗ		1	5.58800		-1.24 dB							
M4		1	5.6108	79 GHz	-27.33 dB	m						
							R	eadv	1		1.00	25.11.2017
							,					

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Plot 7: U-NII-2C; highest channel



Date: 25.NOV.2017 08:22:15

Plot 8: U-NII-3; lowest channel

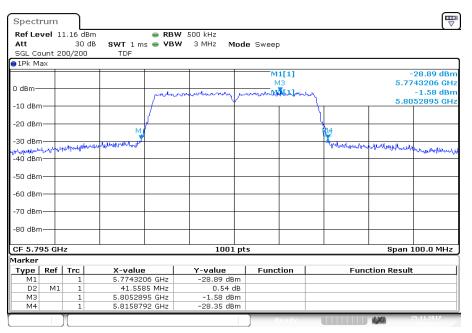
Spect	rum												
Ref Le	vel	11.43 dB	m	🔵 RBW	/ 500 kHz								
Att		30 c	B SWT 1 m:	s 👄 VBW	/ 3 MHz N	iode	Sweep						
SGL Co	unt :	200/200	TDF										
😑 1 Pk M	ах												
							M1	[1]				-2	7.78 dBm
								M	3		5	i.734	4205 GHz
0 dBm-				abodente	monun	more	minde	[J. Jun	hun			-	1.30 dBm
-10 dBm				100	1	٢			- Έ.		5	5.770	8841 GHz
-10 UBI	-			1									
-20 dBm	ע_ר			1					4				
			M							4			
-30 dBrr	י—+		a d hubat of two-1						- 12	habatha an			
merchall	MAY	(filmerouble)	waldhaman							() i no o statoores	Mulmannalana	Star Halfard	WHICHANNE
-40 dBm	ר−י								-				
-50 dBm	י—ר								-				
-60 dBm													
-60 UBI													
-70 dBm	ŋ												
	·												
-80 dBm	י—⊢												
CF 5.7	55 G	Hz			1001	pts					Sp	an 10	0.0 MHz
Marker													
Type	Ref	Trc	X-value	1	Y-value	1	Funct	ion		Fu	nction Re	sult	
M1		1	5.734420		-27.78 dB	m							
D2	M:		41.358		0.14								
MЗ		1	5.770884	41 GHz	-1.30 dB	m							
M4		1	5.775779	93 GHz	-27.64 dB	m							
		1					0.0	. a d v			4.000	25.	11.2017
											and the second s		

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Plot 9: U-NII-3; highest channel



Date: 25.NOV.2017 08:27:28