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Prüfbericht - Nr.: *Test Report No.:*	**19660222 002**	**Seite 1 von 63** *Page 1 of 63*
Auftraggeber: *Client:*	**Camera Vision Solutions, Inc.** **P.O Box 80249** **Austin, TX 78708** **United States**	
Gegenstand der Prüfung: *Test item:*	**On-board Video Vehicle Recorder**	
Bezeichnung: *Identification:*	**SentinelHDx**	**Serien-Nr.:** *Serial No.* **Sr # 2 & Sr #10**
Wareneingangs-Nr.: *Receipt No.:*	**1803269422**	**Eingangsdatum:** *Date of receipt:* 06-11-2017
Prüfort: *Testing location:*	**Refer** Page 5 of 63 **for Test site details**	
Prüfgrundlage: *Test specification:*	**FCC Part 15 Subpart E 15.407,** **ANSI C63.10- 2013**	
Prüfergebnis: *Test Result:*	**Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n).** *The test items passed the test specification(s).*	
Prüflaboratorium: *Testing Laboratory:*	**TÜV Rheinland (India) Pvt. Ltd.** 82/A, 3rd Main, West Wing, Electronic City Phase 1 Hosur Road, Bangalore – 560 100. India FCC Test Site Registration no.: **496599**	

geprüft / *tested by:*

Datum / Date	Name/Stellung / Name/Position	Unterschrift / Signature
08-11-2017	Santhosh S K Engineer	Santhosh S K

kontrolliert / *reviewed by:*

Datum / Date	Name/Stellung / Name/Position	Unterschrift / Signature
17-11-2017	Saibaba Siddapur Assistant Manager	Saibaba

Sonstiges / *Other Aspects:* **Class II Permissive change (FCC ID: 2AFS2 – SHDX) and On receipt the equipment was in good condition.**

Abkürzungen:				Abbreviations:			
P(ass)	=	entspricht Prüfgrundlage		P(ass)	=	passed
F(ail)	=	entspricht nicht Prüfgrundlage		F(ail)	=	failed
N/A	=	nicht anwendbar		N/A	=	not applicable
N/T	=	nicht getestet		N/T	=	not tested

Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.

This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.

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CIN: U72501KA1996PTC020653

TEST SUMMARY

Section	Test item	Result	Remarks
15.407 (a)	Emission Bandwidth (26 dB Bandwidth),Minimum Emission Bandwidth (6 dB)	N/T	The Product is Certified with FCC ID: 2AFS2 – SHDX from TUV Rheinland India Private Limited with report number 19660222 001.
15.407 (a)	Maximum Power Spectral Density	N/T	
15.207	Conducted emission on A.C power lines	N/T	
15.407 (a)	Maximum Conducted output power	PASS*	-
15.407 (b) / (15.209 & 15.205)	Unwanted emission measurements	PASS	-

*: power was verified on a random data rate in both path A and path B.

Note: Device exclusively used in vehicle only, it will operate on vehicle battery & internal back up battery only.

DOCUMENT HISTORY:

Version	Remarks
1.0	Issued for C2PC(only Power Verification & Radiated spurious emission was performed on product)

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1 GENERAL REMARKS

1.1 Complimentary Materials

All attachments are integral part of this test report. This applies especially to the following appendix:

APPENDIX 1: TEST SETUP PHOTOS

APPENDIX 2: EUT EXTERNAL PHOTOS

APPENDIX 3: EUT INTERNAL PHOTOS

APPENDIX 4: SCHEMATIC DIAGRAMS

APPENDIX 5: BILL OF MATERIALS

2 TEST SITES

2.1 Testing Facilities

TUV Rheinland (India) Private Limited
108 , Beside ISBR Business School,
Electronic city Phase I
Bangalore - 560 100.

2.2 List of Test and Measurement Instruments

Table 1: List of test and measurement instruments

Equipment	Manufacturer	Model Name	Serial Number	Calibration Due Date	Periodicity	Used for Test Items
EMI Test Receiver	Rohde & Schwarz	ESU 40	100288	24-10-2018	Yearly	Radiated Spurious Emission
Active loop antenna	Frankonia	LAX-10	LAX-10-800	22-12-17	Yearly	
Baloon and Biconical Antenna	Schwarzbeck mess-elektronik	VHBB-9124 / BBA-9106	9124-656	09-01-18	Yearly	
Log-Periodic Antenna	Schwarzbeck mess-elektronik	VUSLP-9111B	9111B-111	10-01-18	Yearly	
Broadband Horn Antenna	Frankonia	HAX-18	HAX18-802	16-03-2018	Yearly	
Semi Anechoic Chamber	Frankonia	-	-	-	-	
Signal Analyzer	Rohde & Schwarz	FSV7	101644	01-12-17	Yearly	Antenna port Measurements

3 GENERAL PRODUCT INFORMATION

3.1 Product Function and Intended Use

Sentinel HDx unit is a Dual Camera Event Recorder and will be installed on the windshield of the vehicle. This product is going to be installed inside the vehicles like cars, truck, taxi etc.

3.2 Ratings and System Details

Table 2: Ratings and System Details

Operating Frequency Range	5150 MHz – 5250 MHz 5725 MHz – 5850 MHz
Radio Protocol	Wi-Fi
Channel Spacing	20 MHz, 40 MHz – Wi- Fi
Verified Power	802.11 a: 9.61 dBm 802.11 n HT20: 9.32 dBm 802.11 n HT40: 7.61 dBm
Data Rate	802.11 a: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11 n: Refer Data Rate 1
Modulation	802.11 a: OFDM with BPSK, QPSK, 16 -QAM, 64 – QAM 802.11 n: OFDM with BPSK, QPSK, 16 - QAM, 64 - QAM
Number of antennas	2
Antenna Gain & Type	Refer Table 4 : Antenna Details
Supply Voltage to Product	9 to 17 VDC from Vehicle Battery; 3.0 to 4.2 VDC from Internal Battery
Environmental conditions	Storage: -20 °C to +60 °C; Operating: -10 °C to +50 °C;

Data Rate 1 :

802.11 n HT 20: 6.5, 13, 19.5, 26, 39, 52, 58.5,65, 13, 26, 39, 52, 78, 104,117 & 130 Mbps

802.11 n HT 40: 13.5, 27, 40.5, 54, 81, 108, 121.5, 135, 27, 54, 81, 108, 162, 216, 243, 270 Mbps

3.3 Measurement Uncertainty:

Table 3: Measurement Uncertainty

Parameter	Uncertainty
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±1.5 dB
Power Spectral Density, conducted	±3 dB
Unwanted Emissions, conducted	±3 dB
All emissions, radiated	±6 dB
Temperature	±3 ℃
Supply Voltages	±3 %
Time	±5 %

3.4 Antenna Details

Table 4 : Antenna Details

Make	TAIYO YUDEN	Laird
Model	AH 104N2450D1	WTS 2450
Antenna Gain	2.1 dBi (2.4 GHz Band) 2.4 dBi (5 GHz Band)	2.1 dBi (2.45 GHz Band) 2.6 dBi (5.25 GHz) & 3.4 dBi (5.875 GHz)
Type	Chip	External Two-Way Radio Antenna
Data Sheet	https://media.digikey.com/pdf/Data%20Sheets/Taiyo%20Yuden%20PDFs%20URL%20links/AH104N2450D1_Char.pdf	https://assets.lairdtech.com/home/brandworld/files/ANT-DS-WTS%202450%20080114.pdf

4 TEST SET-UP AND OPERATION MODE

4.1 Principle of Configuration Selection

Transmission was enabled with continuous transmission on low, mid and high channel.

4.2 Test Operation and Test Software

Testing software was used to enable the continuous transmission, changing (low / mid / high) channels and data rates on the EUT for the tests in this report.

Software Simulator used: "Tera Term or Putty"
Firmware Version: “3.1.5 RC1”
Hardware Version: “4.0”

4.3 Special Accessories and Auxiliary Equipment

- Debugger Board, Vehicle Battery, Power Cable was used during testing.

4.4 Countermeasures to achieve EMC Compliance

- None

4.5 Test modes – data rates and modulations

For Radiated spurious emissions, the tests were performed for all data rates and only worst case results are reported in this report.

Antenna Port measurements are performed on the following paths

Path A – J7 Connector –ANT1
Path B – J8 Connector – ANT2

Bluetooth BDR+EDR, Bluetooth LE will transmit only on ANT2 & Wi-Fi (IEEE802.11 abgnHT20 / HT40) will transmit on both ANT1 & ANT2, Product also has GPS functionality with operating frequency 1575.42MHz

Sample used for testing as identified with below number.

Sample Serial No.02
Sample Serial No.10

4.6 List of frequencies

Table 5: List of Center Frequiences

Frequency Band (MHz)	Channel Number	Channel Frequency
U-NII-1 5.15 – 5.25 GHz	36	5180
	38	5190
	40	5200
	44	5220
	46	5230
	48	5240
U-NII-3 5.725 – 5.850 GHz	149	5745
	151	5755
	153	5765
	157	5785
	159	5795
	161	5805
	165	5825

5 TEST METHODOLOGY

5.1 Radiated Emission Test

The radiated emission measurement was performed according to the procedures in ANSI C63.10-2013. The equipment under test (EUT) was placed at the middle of the 80 cm high turntable for below 1 GHz & 1.5 m height for above 1 GHz measurement, and the EUT is 3 meters far from the measuring antenna. The turntable was rotated 360° for obtaining the maximum emission. The height of the measuring antennas was scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations. Repeat the measurement steps until the maximum emissions were obtained. The measurement above 1000 MHz was performed by horn antenna, The measurement below 30 MHz was performed by loop antenna, Measurement from 30 MHz to 200 MHz was performed by Baloon and Biconical Antenna, and mesurement from 200 MHz to 1 GHz was performed by Log-Periodic Antenna.

The EUT was rotated around the X-, Y-, and Z-Axis and the results from worst case axis are recorded.

5.1.1 Test Setup Configuration

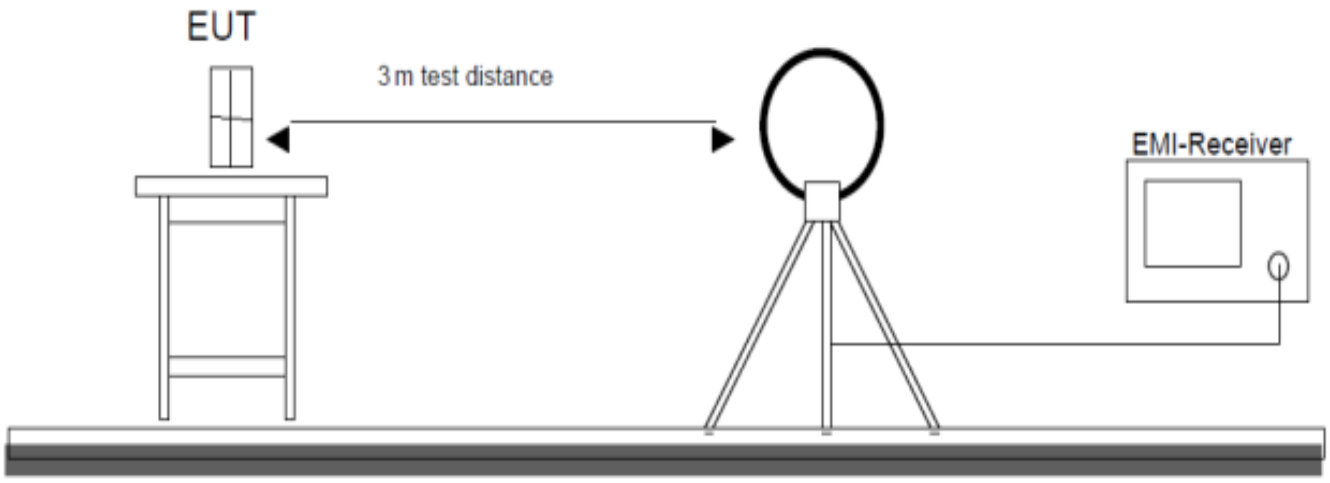


Figure 1: Frequency Range 9kHz – 30 MHz

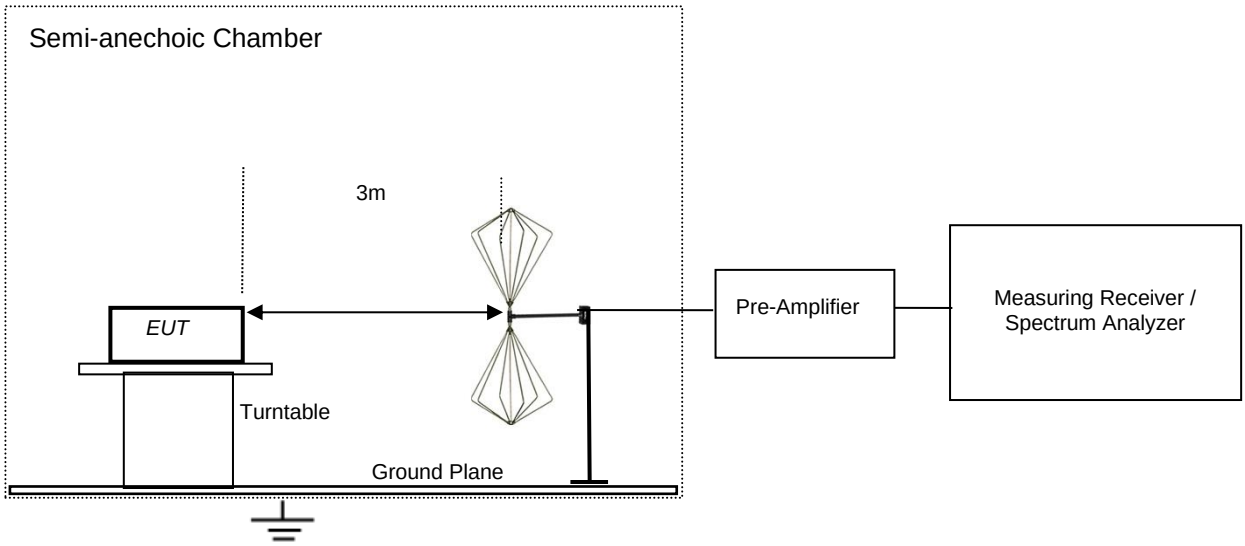


Figure 2: Frequency range 30 MHz to 200 MHz

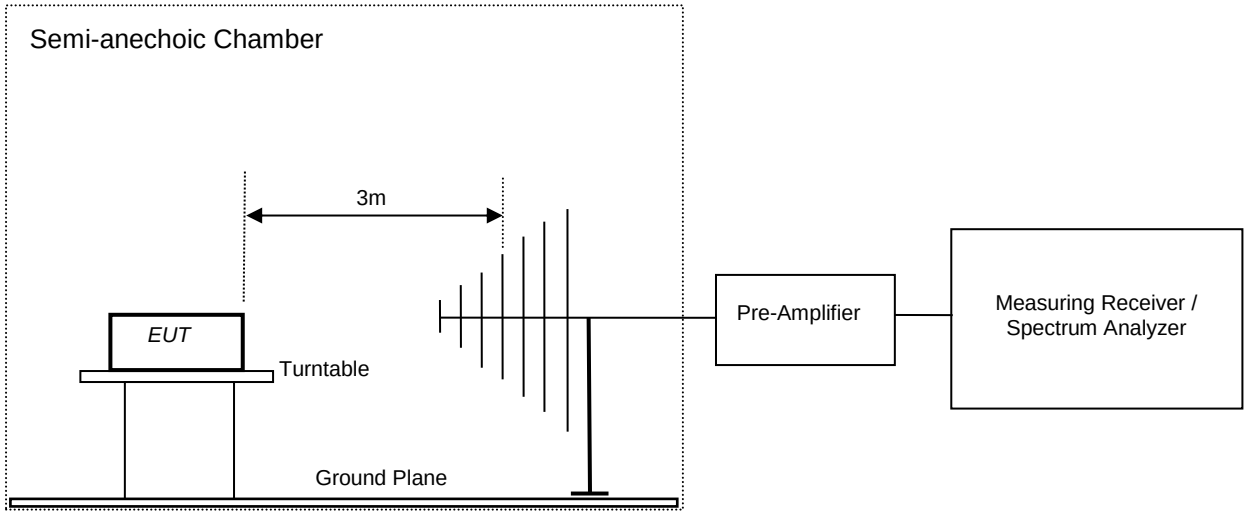


Figure 3: Frequency Range 200 MHz – 1 GHz

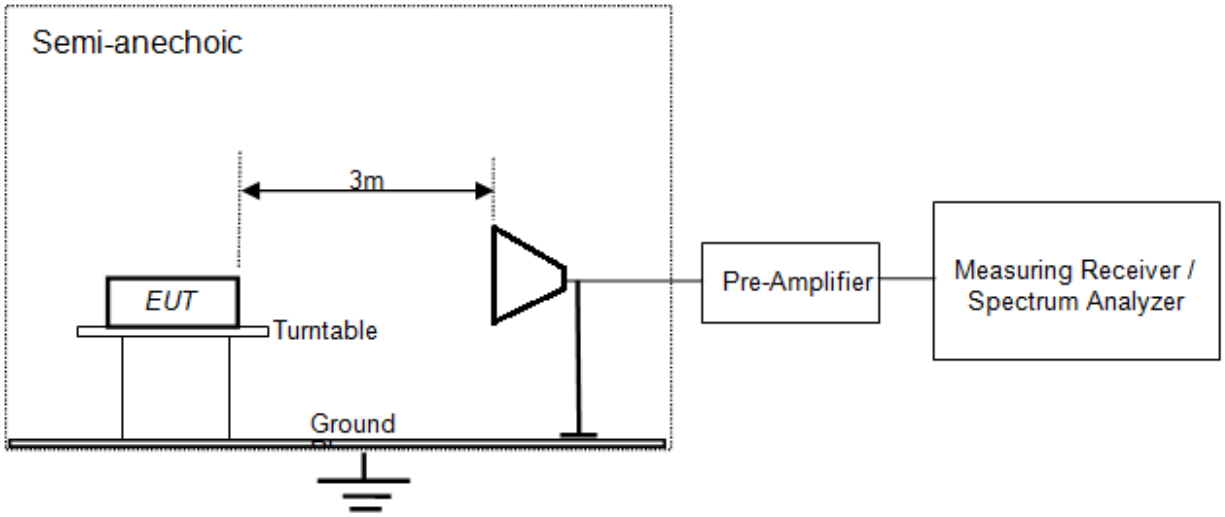


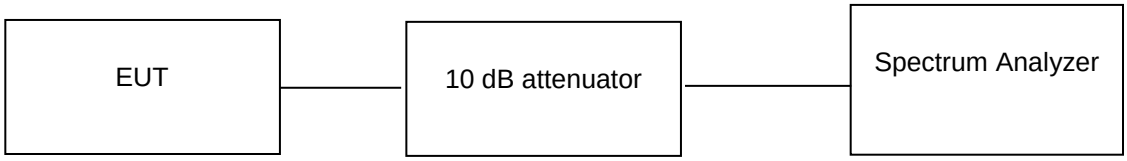
Figure 4: Frequency Range above 1 GHz

6 TEST RESULTS

6.1 Maximum Conducted output power

Result ***Pass***

Test Specification	FCC part 15 Subpart E Section 15.407 (a)
Measurement Bandwidth / RBW	1 MHz
Requirement	As per 905462 D06 802.11 Channel Plans New Rules v02



Test results:

Note: Measurement was made as per section E (2) in KDB 789033 D02 General UNII Test Procedures New Rules v01r04.

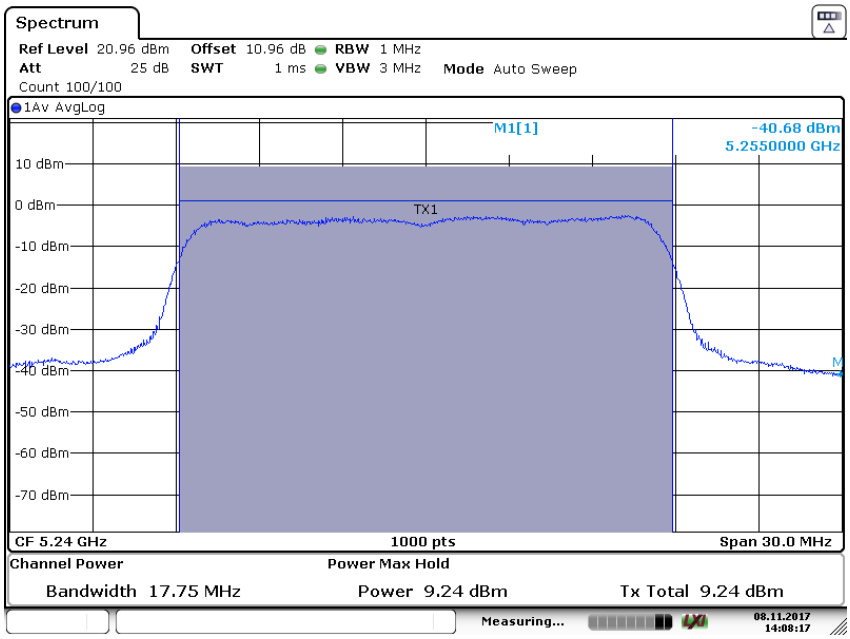
10 dB attenuator + 0.96 Cable loss = 10.96 dB offset is considered in below result.

Wi-Fi – Path A / ANT1 / J7

Table 6: 802.11 a Path A

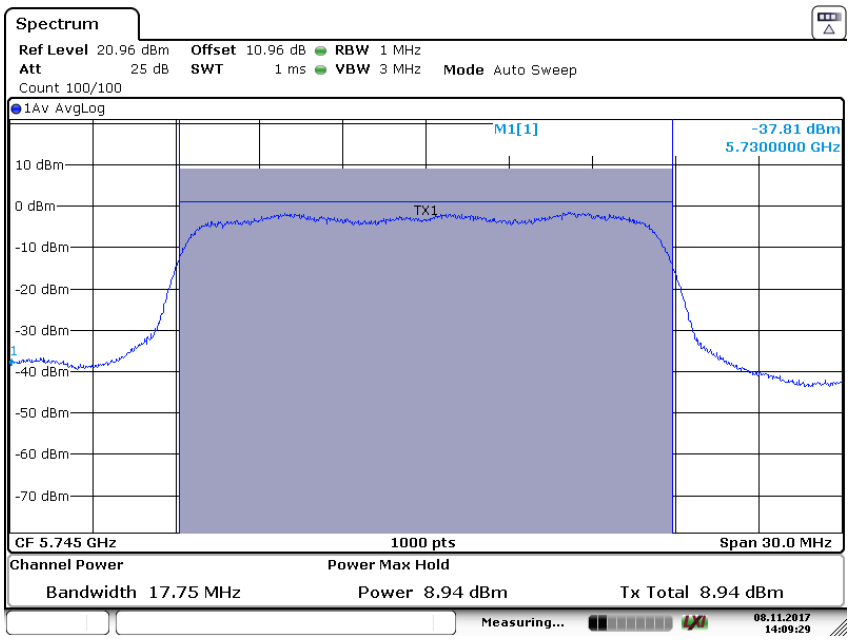
Modulation Type	Channel number	Channel Frequency (MHz)	Average power (dBm)	Average power (mW)
6 Mbps	48	5240	9.24	8.39
	149	5745	8.94	7.83
24 Mbps	48	5240	8.96	7.87
	149	5745	8.94	7.83
54 Mbps	48	5240	8.97	7.88
	149	5745	9.61	9.14

Test Graph 1: 6 Mbps Channel 48 / 5240 MHz path A power



Date: 8.NOV.2017 14:08:17

Test Graph 2: 6 Mbps channel 149 / 5745 MHz Path A power



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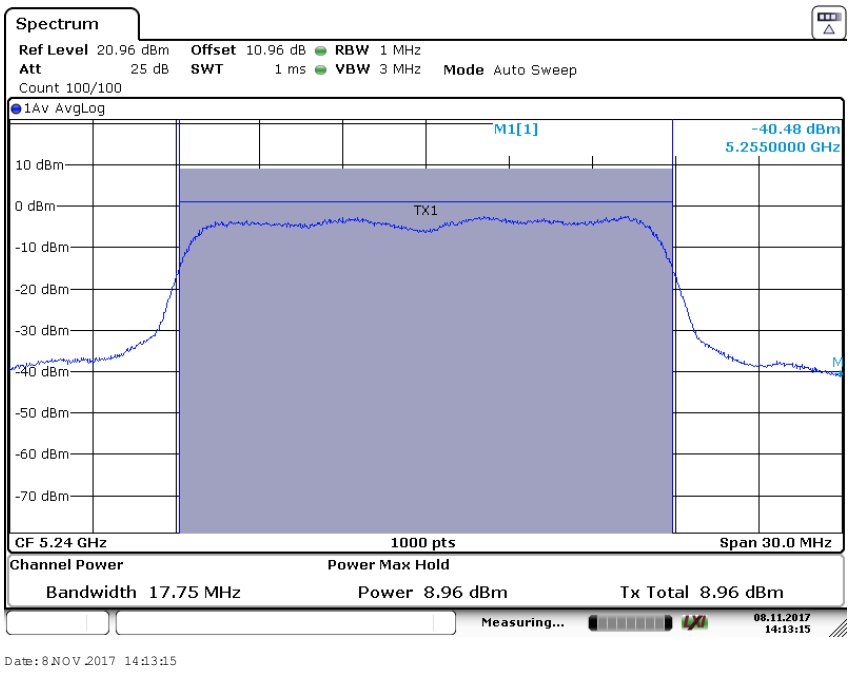
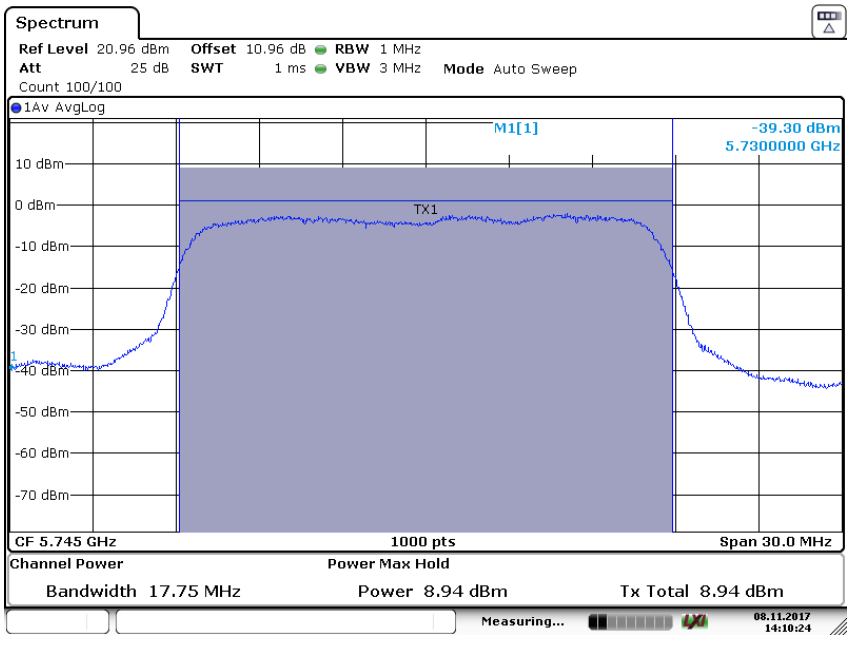
Test Graph 3: 24 Mbps channel 48 / 5240 MHz Path A power



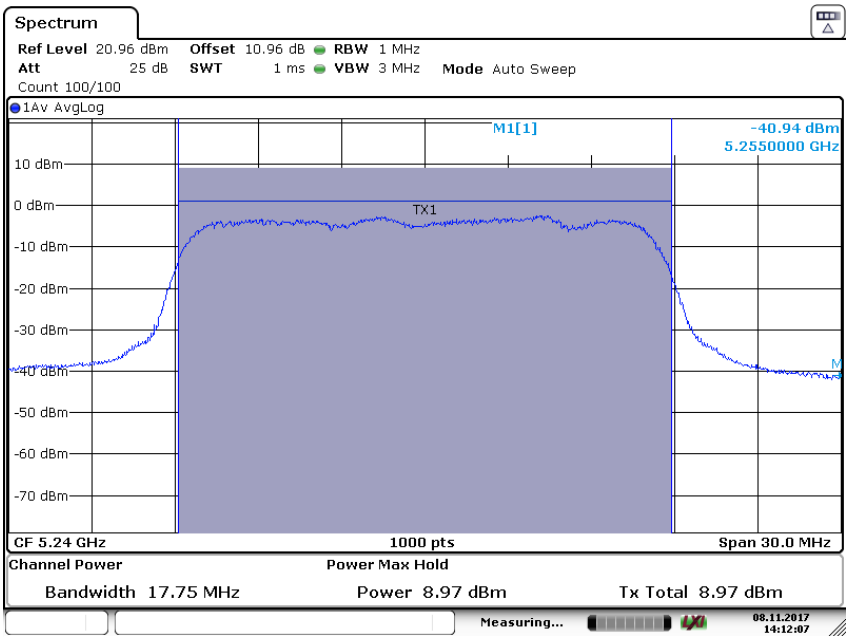
Date: 8.NOV.2017 14:13:15

Test Graph 4: 24 Mbps channel 149 / 5745 MHz Path A power



Date: 8.NOV.2017 14:10:25

Test Graph 5: 54 Mbps channel 48 / 5240 MHz Path A power



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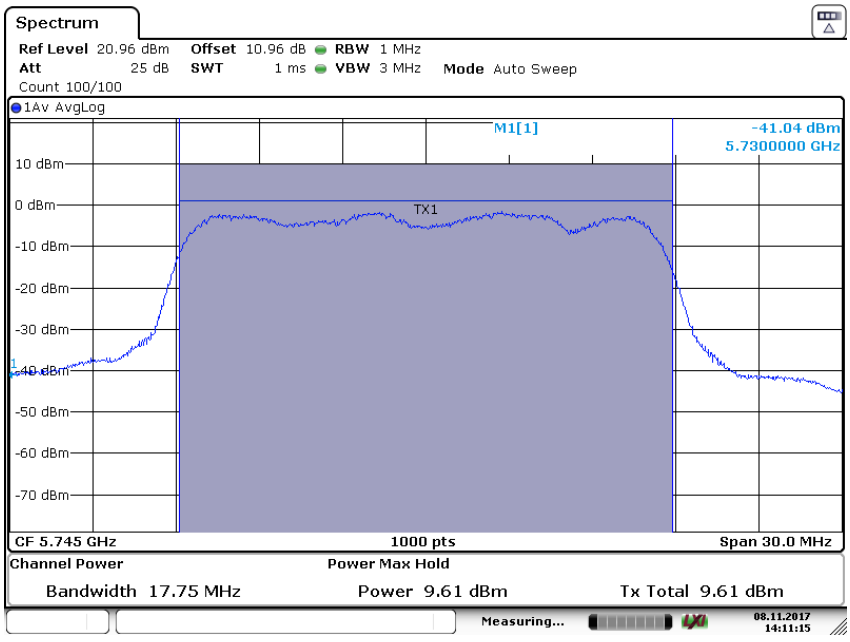
Test Graph 6: 54 Mbps channel 149 / 5745 MHz Path A power

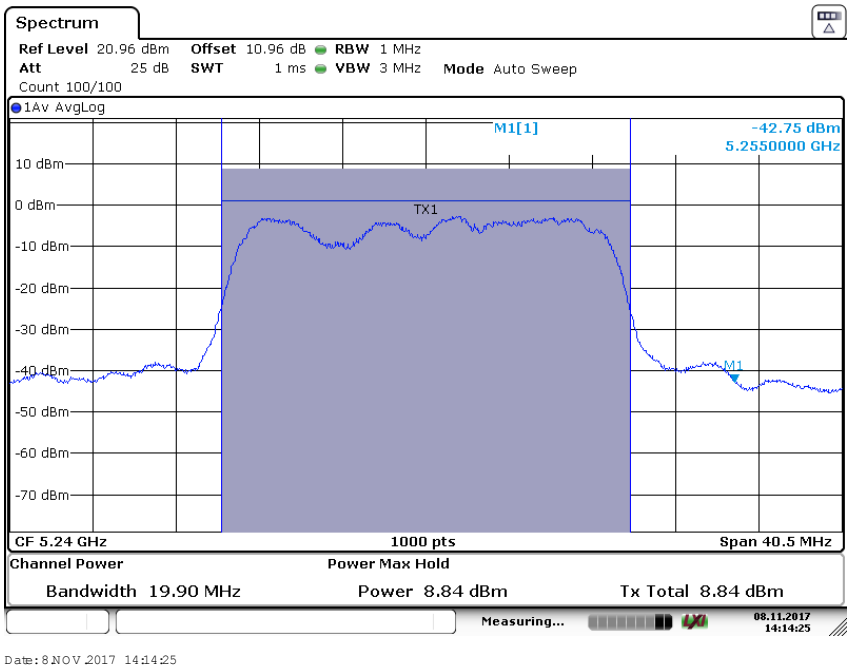


Date: 8.NOV.2017 14:11:15

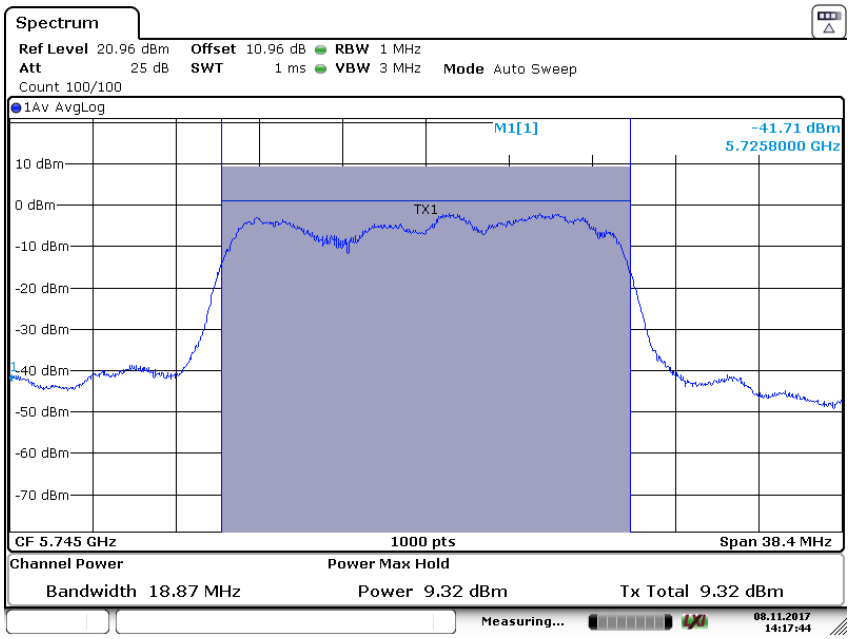
Table 7: 802.11 n HT 20 Path A

Modulation Type	Channel number	Channel Frequency (MHz)	Average power (dBm)	Average power (mW)
MCS0	48	5240	8.84	7.65
	149	5745	9.32	8.55
MCS15	48	5240	8.87	7.70
	149	5745	8.25	6.68

Test Graph 7: MCS0 HT 20 Channel 48 / 5240 MHz Path A power

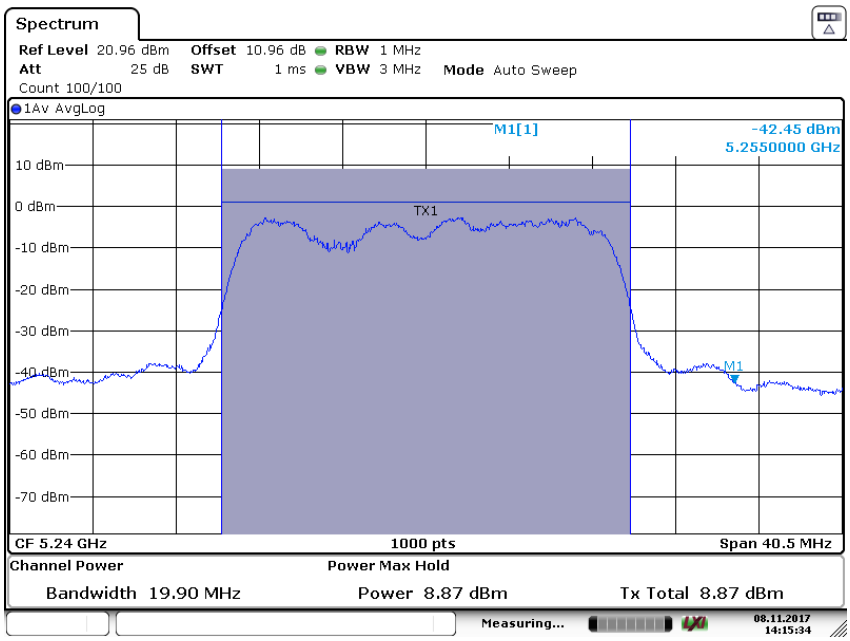


Test Graph 8: MCS0 HT 20 Channel 149 / 5745 MHz Path A power



Date: 8.NOV.2017 14:17:45

Test Graph 9: MCS15 HT 20 Channel 48 / 5240 MHz Path A power



Date: 8.NOV.2017 14:15:34

Test Graph 10: MCS15 HT 20 Channel 149 / 5745 MHz Path A power

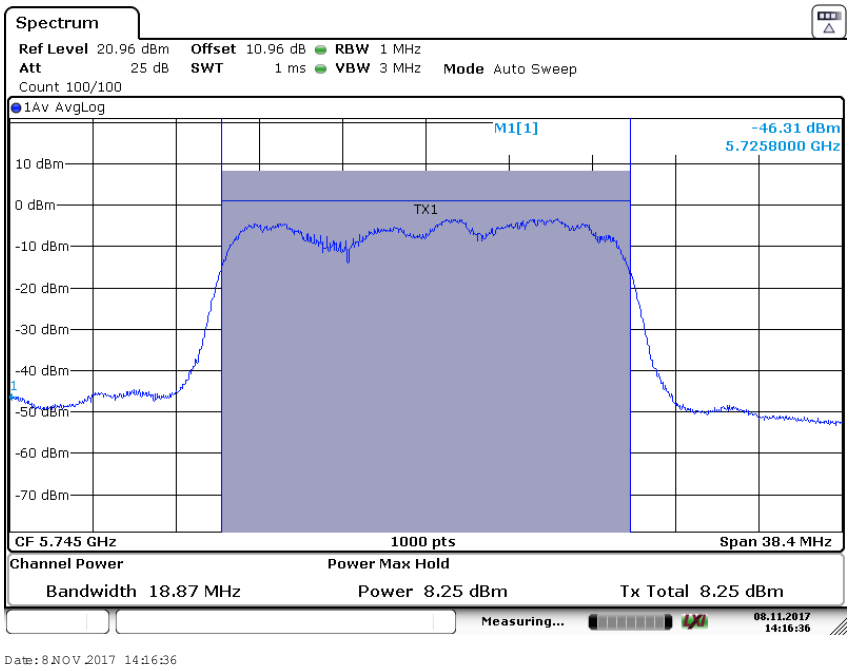
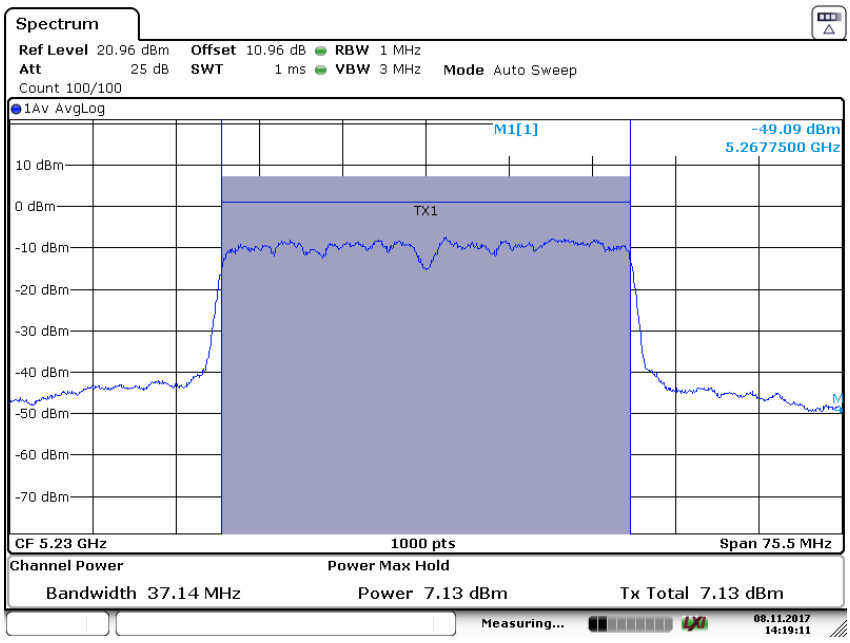


Table 8: 802. 11 n HT 40 Path A

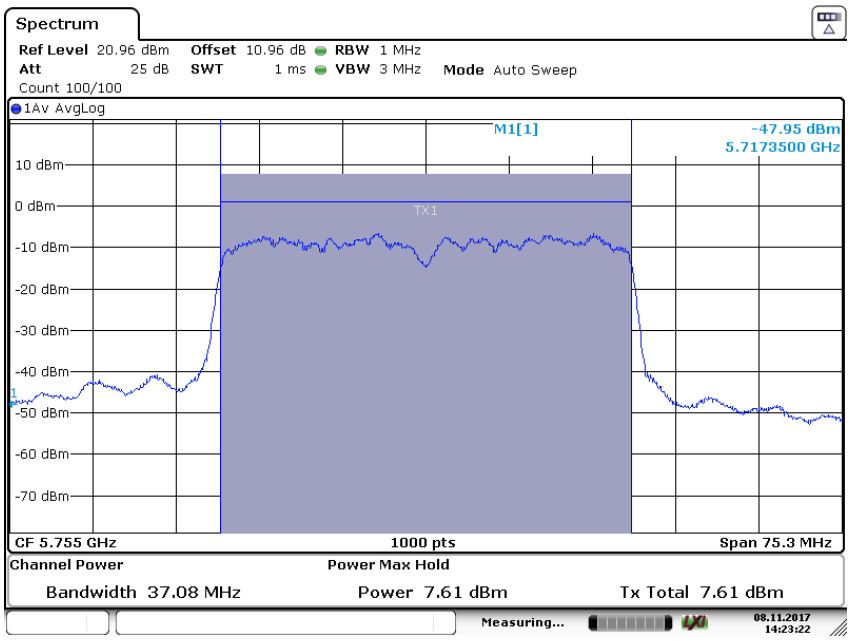
Modulation Type	Channel number	Channel Frequency (MHz)	Average power (dBm)	Average power (mW)
MCS0	46	5230	7.13	5.16
	151	5755	7.61	5.76
MCS15	46	5230	6.80	4.78
	151	5755	7.19	5.23

Test Graph 11: MCS0 HT 40 Channel 46 / 5230 MHz Path A power



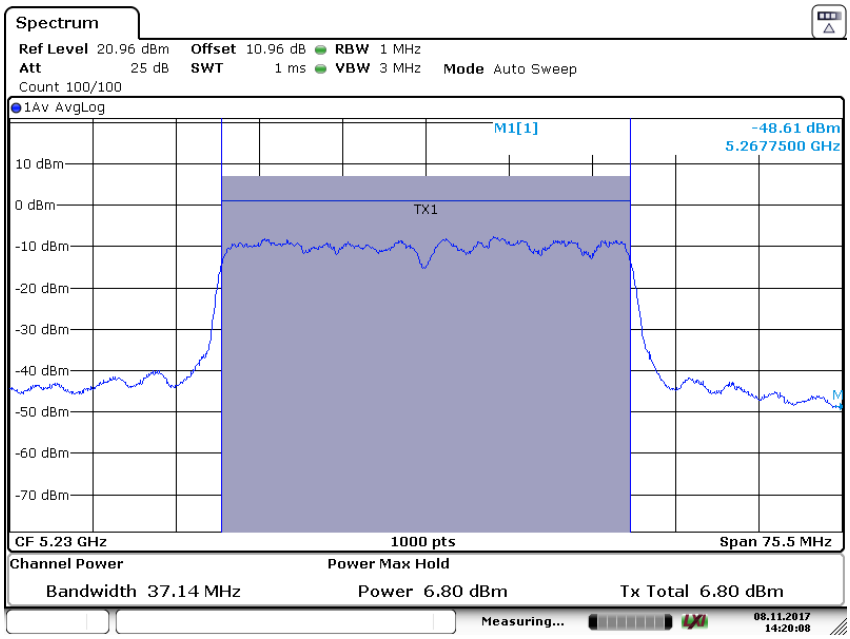
Date: 8.NOV.2017 14:19:11

Test Graph 12: MCS0 HT 40 Channel 151 / 5755 MHz Path A power



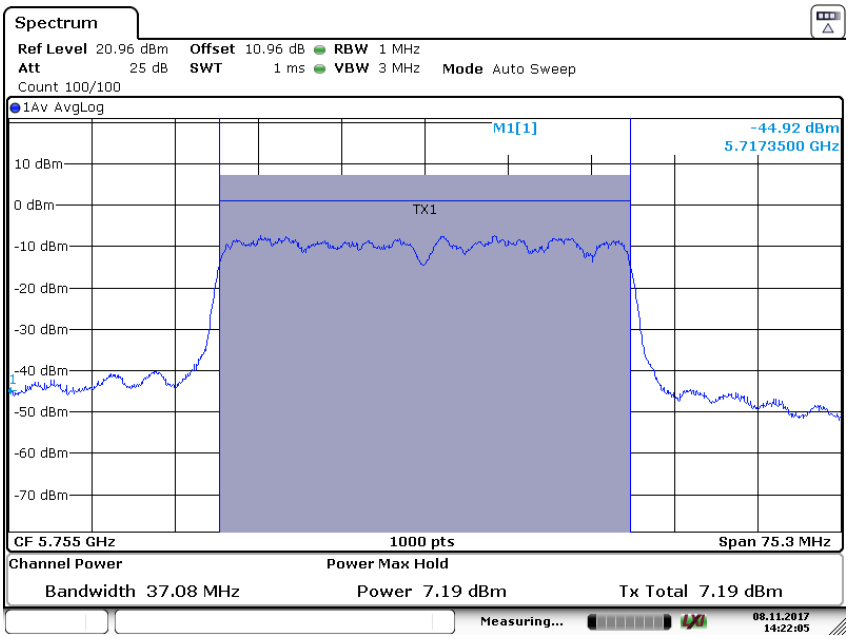
Date: 8.NOV.2017 14:23:22

Test Graph 13: MCS15 HT 40 Channel 46 / 5230 MHz Path A power



Date: 8.NOV.2017 14:20:09

Test Graph 14: MCS15 HT 40 Channel 151 / 5755 MHz Path A power

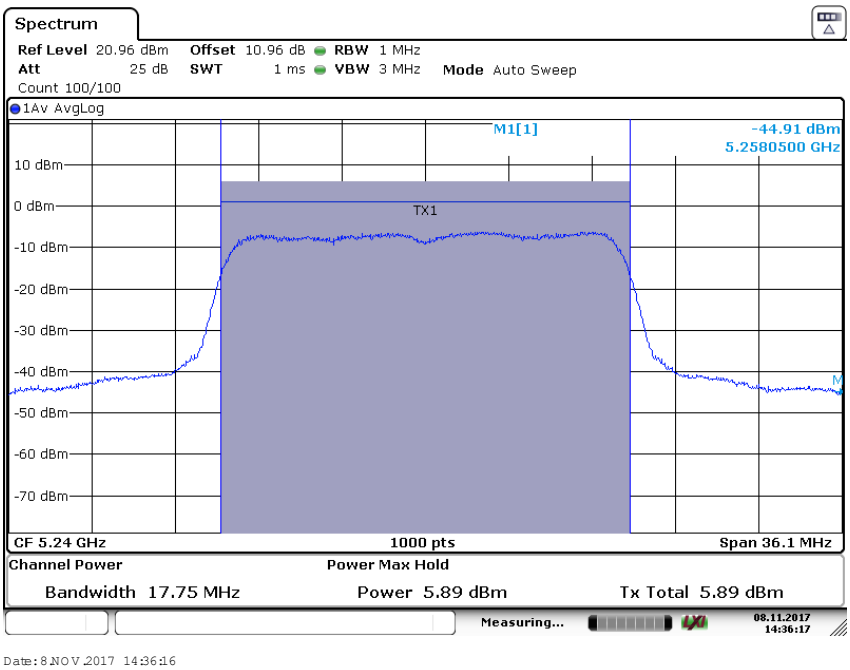


Date: 8.NOV.2017 14:22:05

Table 9: 802.11 a Path B

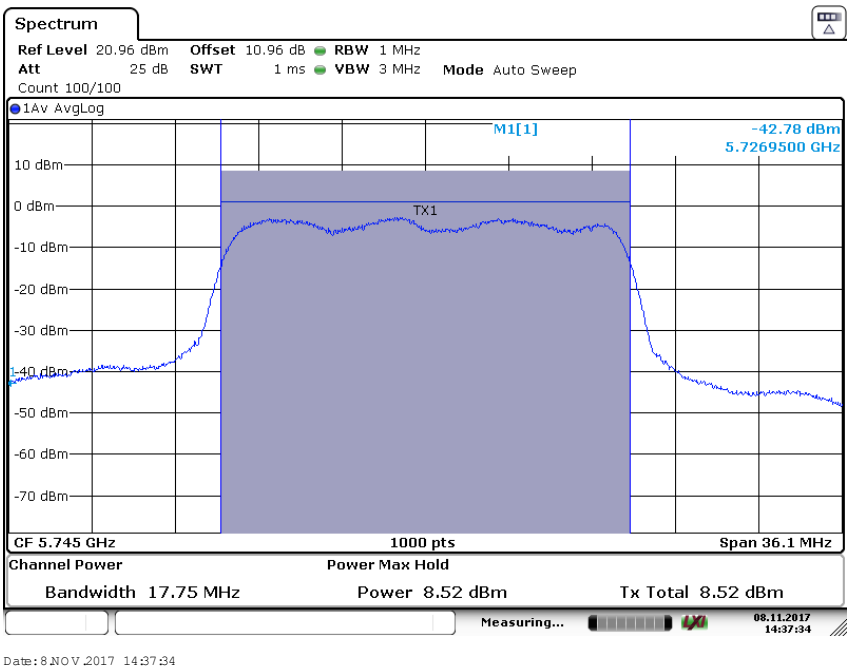
Modulation Type	Channel number	Channel Frequency (MHz)	Average power (dBm)	Average power (mW)
6 Mbps	48	5240	5.89	3.88
	149	5745	8.52	7.11
24 Mbps	48	5240	4.96	3.13
	149	5745	8.69	7.39
54 Mbps	48	5240	5.43	3.49
	149	5745	8.46	7.01

Test Graph 15: 6 Mbps Channel 48 / 5240 MHz path B power



Date: 8.NOV.2017 14:36:16

Test Graph 16: 6 Mbps channel 149 / 5745 MHz Path B power



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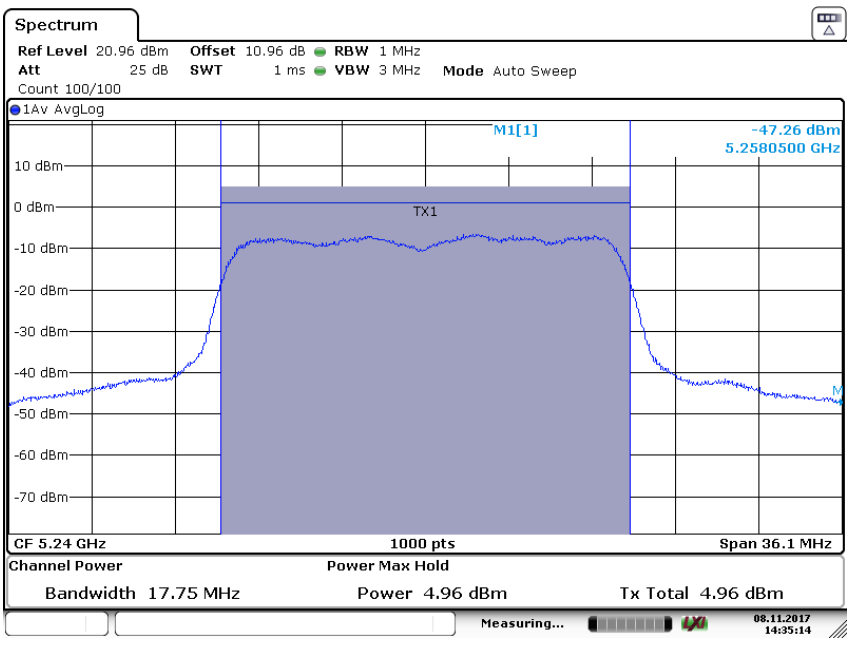
Test Graph 17: 24 Mbps channel 48 / 5240 MHz Path B power



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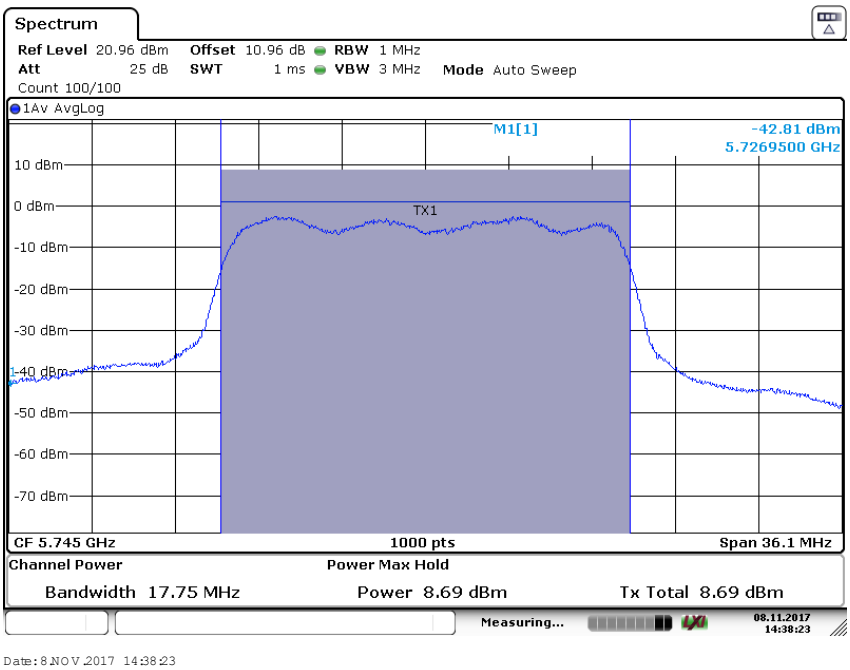
Test Graph 18: 24 Mbps channel 149 / 5745 MHz Path B power



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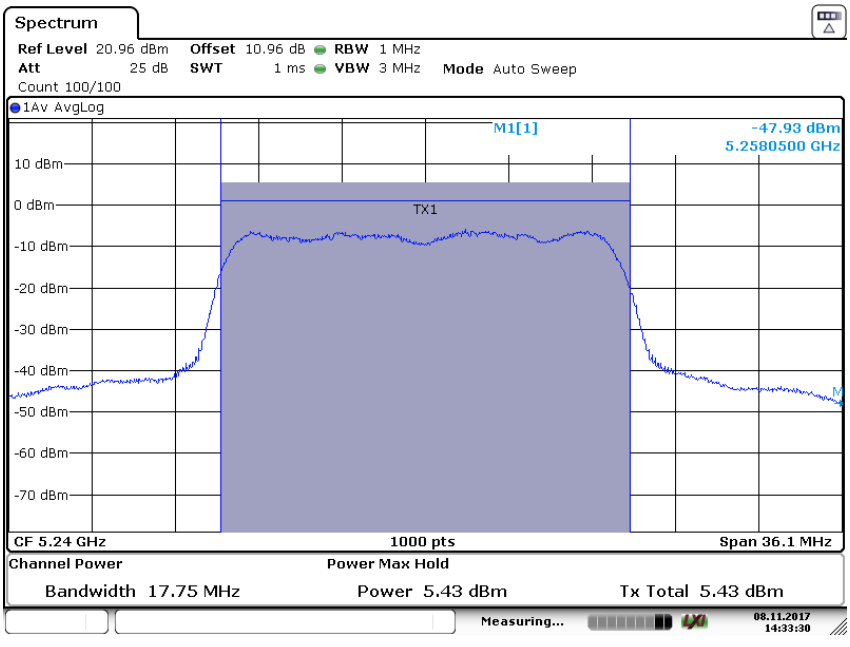
Test Graph 19: 54 Mbps channel 48 / 5240 MHz Path B power



Date: 8.NOV.2017 14:33:31

Test Graph 20: 54 Mbps channel 149 / 5745 MHz Path B power

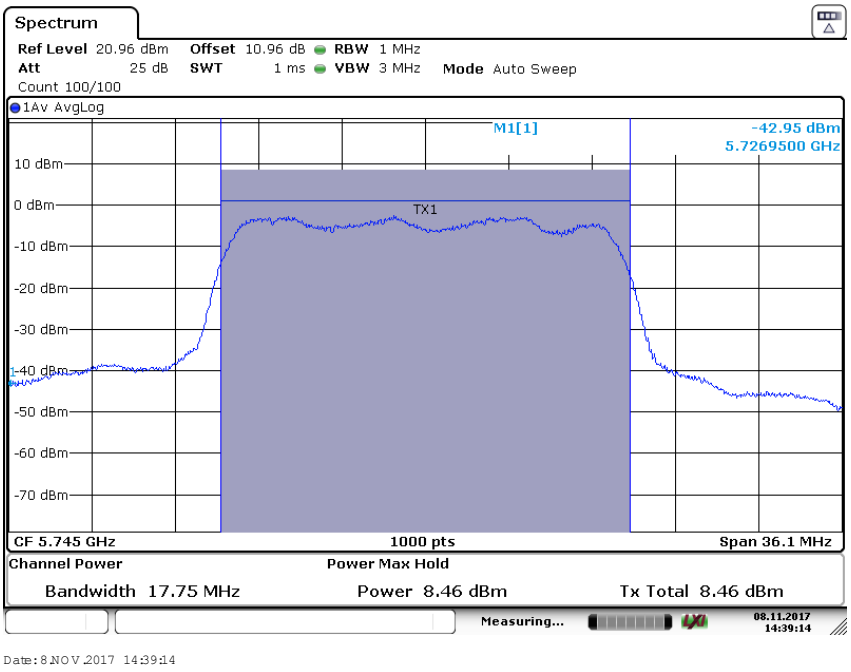
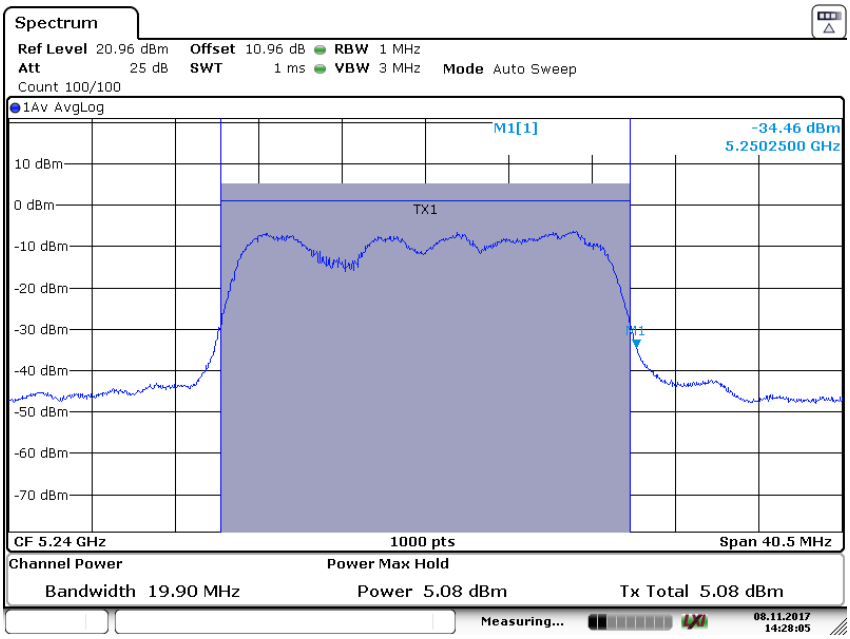


Table 10: 802.11 n HT 20 Path B

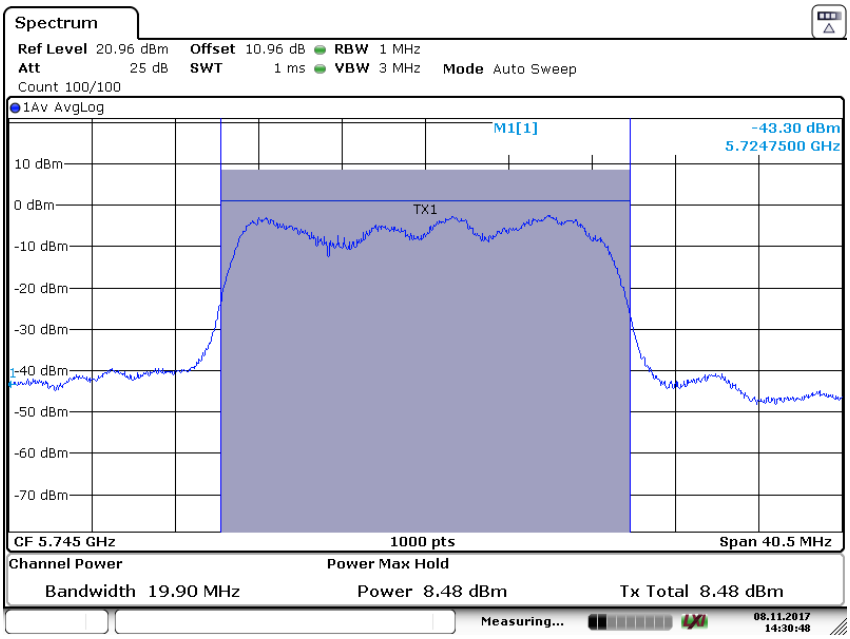
Modulation Type	Channel number	Channel Frequency (MHz)	Average power (dBm)	Average power (mW)
MCS0	48	5240	5.08	3.22
	149	5745	8.48	7.04
MCS15	48	5240	5.28	3.37
	149	5745	8.69	7.39

Test Graph 21: MCS0 HT 20 Channel 48 / 5240 MHz Path B power



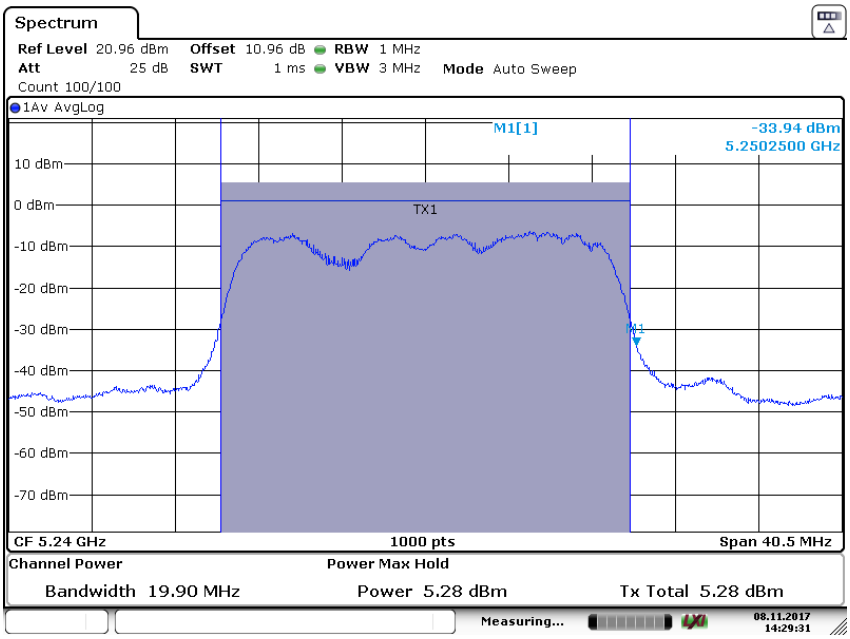
Date: 8.NOV.2017 14:28:05

Test Graph 22: MCS0 HT 20 Channel 149 / 5745 MHz Path B power



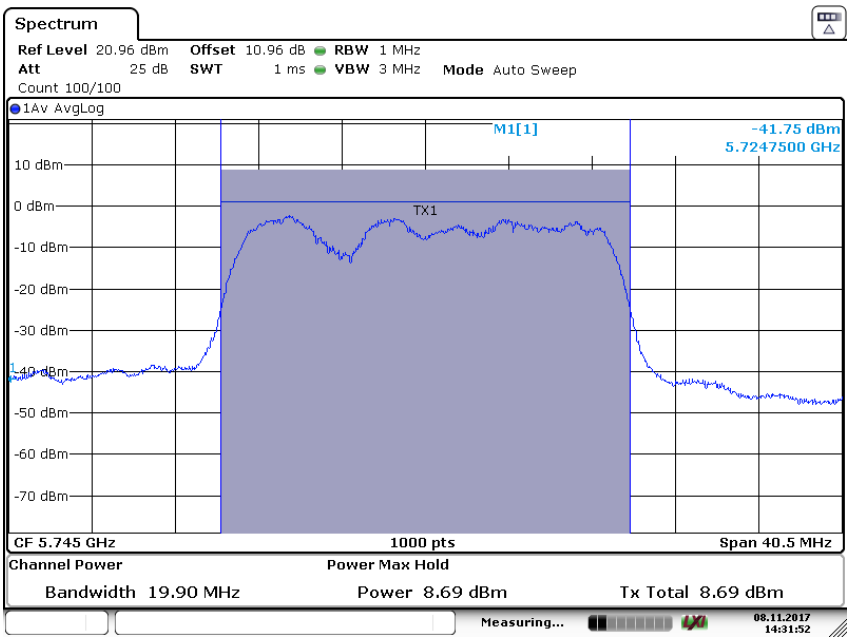
Date: 8.NOV.2017 14:30:48

Test Graph 23: MCS15 HT 20 Channel 48 / 5240 MHz Path B power



Date: 8.NOV.2017 14:29:32

Test Graph 24: MCS15 HT 20 Channel 149 / 5745 MHz Path B power

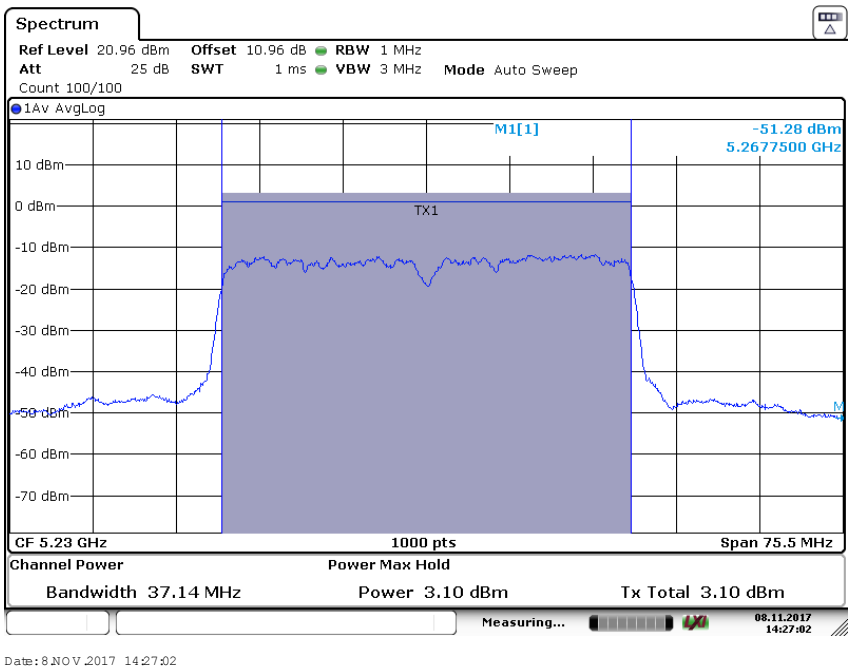


Date: 8.NOV.2017 14:31:52

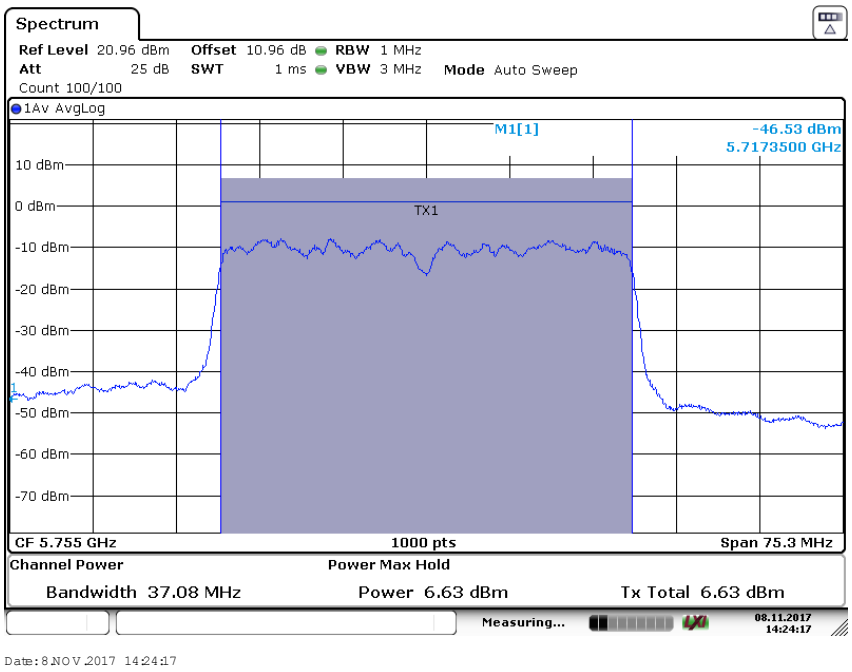
Table 11: 802. 11 n HT 40 Path B

Modulation Type	Channel number	Channel Frequency (MHz)	Average power (dBm)	Average power (mW)
MCS0	46	5230	3.10	2.04
	151	5755	6.63	4.60
MCS15	46	5230	2.84	1.92
	151	5755	6.47	4.43

Test Graph 25: MCS0 HT 40 Channel 46 / 5230 MHz Path B power

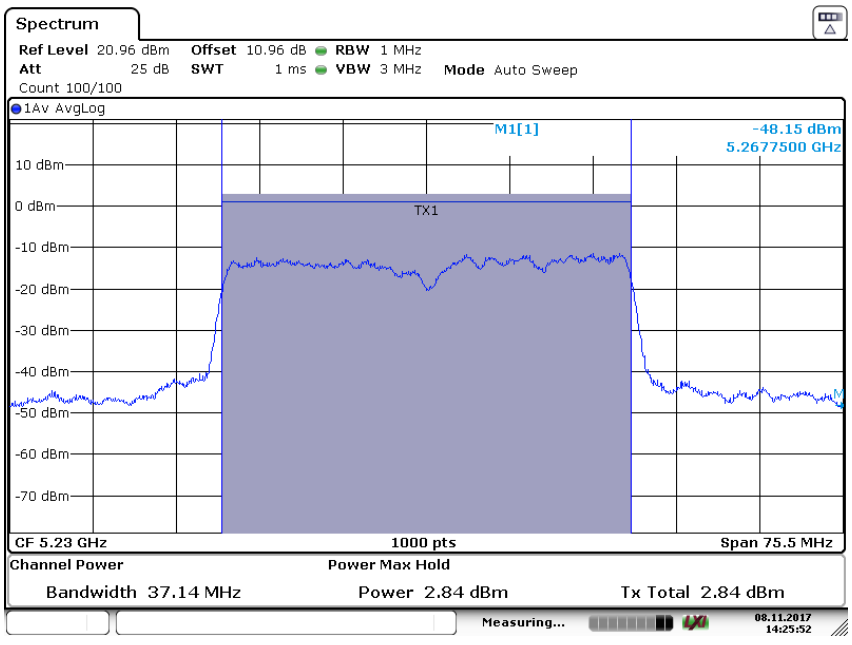


Test Graph 26: MCS0 HT 40 Channel 151 / 5755 MHz Path B power



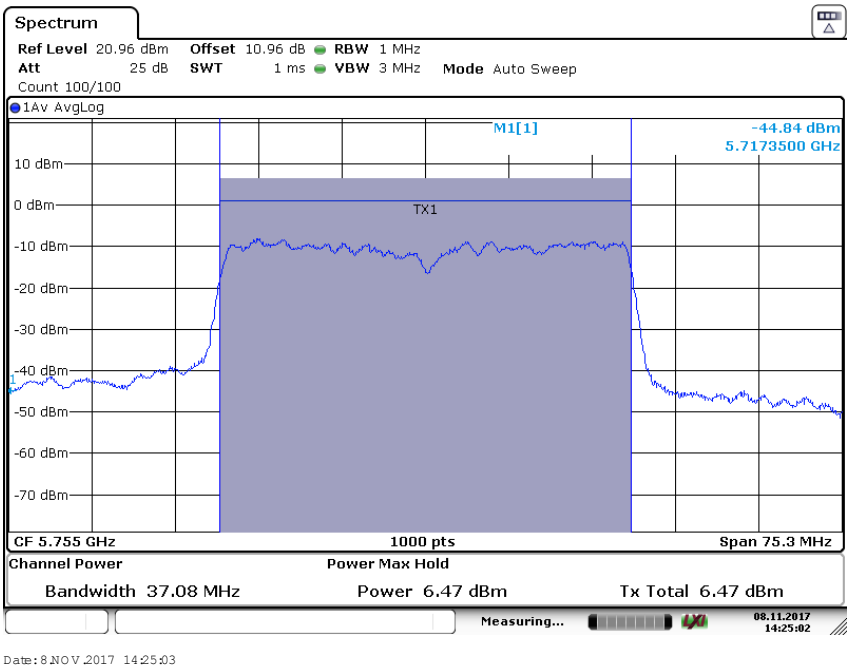
Date: 8.NOV.2017 14:24:17

Test Graph 27: MCS15 HT 40 Channel 46 / 5230 MHz Path B power



Date: 8.NOV.2017 14:25:52

Test Graph 28: MCS15 HT 40 Channel 151 / 5755 MHz Path B power



6.2 Unwanted emission measurements

Result ***Pass***

Test Specification	FCC part 15 Subpart E Section 15.407 (b) / (15.209 & 15.205)
Test Method	ANSI C 63.10 - 2013
Measurement Location	Semi Anechoic Chamber
Measuring Distance	3 m
Detector	QP for frequency below 1 GHz, average for frequency above 1 GHz
Requirement	As per the limits mentioned in the below table

Table 12: Transmitter limits for Radiated emission of Section 15.209

Frequency (MHz)	Field strength (µV/m)	Field strength (dBµV/m)	Distance of Measurement (m)
0.009 – 0.490	2400/F(kHz)	48.50 – 13.80	300*
0.490 – 1.705	24000/F(kHz)	33.80 – 23.00	30*
1.705 -30	30	29.54	30*
30-88	100	40.0	3
88-216	150	43.5	3
216-960	200	46.0	3
Above 960	500	54.0	3

Remark: * The limit shows in the table above of frequency range 0.009 – 0.490, 0.490 – 1.705 MHz and 1.705-30MHz is at 300 meter, 30 meter and 30 meter range respectively, which corresponds to 128.51 – 93.80, 73.80 – 62.96 and 69.54 dBµV/m at 3m range by extrapolation calculation and the measurement of loop antenna.

The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz Radiated emission limits in these three bands are based on measurements employing an average detector.

Test Conditions:

Supply Voltage: 12 VDC from Vehicle Battery and 3 to 4.2 VDC from Internal Back-up Battery

Environmental conditions:

Temperature: +25.9 °C RH: 62.46 %

Test results:

No emissions found in frequency 9 kHz to 30 MHz

Note: The product has digital device (Camera interfaces, SD card,USB & GPI external Cable) which cannot control the functions of intentional radiator (Wi-Fi, BT(EDR+BDR),BLE)) in such condition Radiated spurious emission for the frequency range from 30MHz to 1GHz was performed as per FCC part 15 subpart B 15.109, Class A requirement & Product exclusively used in Vehicles. Only worst case test results are reported.

Table 13: FCC Part 15 Subpart B 15.109 Class A limits

Frequency MHz	Field Strength dBuV/m	Measured Distance	Field Strength (dBµV/m)
30-88	90.00	10.00	39.08
88-216	150.00	10.00	43.52
216-960	210.00	10.00	46.43
above 960	300.00	10.00	49.54

Table 14: Transmitter test results for the frequency 30 MHz – 200 MHz for Internal Battery

Frequency (MHz)	Polarization	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
45.67	Vertical	17.56	39.08	-21.52
46.24		17.81	39.08	-21.27
70.12		15.74	39.08	-23.34
92.49		22.21	43.52	-21.31
106.37		24.34	43.52	-19.18
119.98		24.74	43.52	-18.78
135.18		26.70	43.52	-16.82
46.20	Horizontal	20.13	39.08	-18.95
84.42		21.87	39.08	-17.21
96.30		20.44	43.52	-23.08
136.47		22.74	43.52	-20.78
192.01		21.82	43.52	-21.70

Table 15: Transmitter test results for the frequency 30 MHz – 200 MHz for External Battery

Frequency (MHz)	Polarization	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
41.28	Vertical	27.18	39.08	-11.90
42.44		25.46	39.08	-13.62
62.93		32.96	39.08	-6.12
67.83		34.93	39.08	-4.15
96.43		26.85	43.52	-16.67
140.00		26.73	43.52	-16.79
41.53	Horizontal	25.24	39.08	-13.84
67.53		20.37	39.08	-18.71
156.04		21.22	43.52	-22.30

Table 16: Transmitter test results for the frequency 200 MHz – 1 GHz for Internal Battery

Frequency (MHz)	Polarization	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
272.96	Vertical	40.84	46.43	-5.59
360.00		36.74	46.43	-9.69
400.00		37.70	46.43	-8.73
800.00		41.38	46.43	-5.05
880.08		43.60	46.43	-2.83
272.96	Horizontal	40.59	46.43	-5.84
400.00		41.36	46.43	-5.07
800.00		45.28	46.43	-1.15
960.00		40.70	46.43	-5.73

Table 17: Transmitter test results for the frequency 200 MHz – 1 GHz for External Battery

Frequency (MHz)	Polarization	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
272.96	Vertical	38.97	46.43	-7.46
380.00		40.70	46.43	-5.73
900.40		41.10	46.43	-5.33
240.00	Horizontal	41.94	46.43	-4.49
272.96		44.25	46.43	-2.18
400.00		43.18	46.43	-3.25
880.08		42.53	46.43	-3.90

Test results for the frequencies above 1 GHz are reported in below table.

UNII-1 Band : 5150 – 5250 MHz

Table 18: 802.11 a 6 Mbps Internal Antenna

Channel Frequency (MHz)	Polarization	Measured Frequency (MHz)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5180.00	Vertical	5150 (Pk)	47.06	74.00	-26.94
		5150 (Av)	32.24	54.00	-21.76
		5180 (Pk)	99.72	-	*
		5180 (Av)	91.17	-	*
		10360 (Pk)	54.44	68.23	-13.79
	Horizontal	5150 (Pk)	48.49	74.00	-25.51
		5150 (Av)	34.80	54.00	-19.20
		5180 (Pk)	100.41	-	*
		5180 (Av)	92.78	-	*
		10360 (Pk)	53.48	68.23	-14.75

5200.00	Vertical	5200(Pk)	100.32	-	*
		5200(Av)	92.23	-	*
		10400 (Pk)	53.70	68.23	-14.53
	Horizontal	5200(Pk)	100.93	-	*
		5200(Av)	93.37	-	*
		10400 (Pk)	53.68	68.23	-14.55
5240.00	Vertical	5240 (Pk)	100.69	-	*
		5240 (Av)	92.73	-	*
		10480 (Pk)	55.14	68.23	-13.09
	Horizontal	5240 (Pk)	102.58	-	*
		5240 (Av)	94.21	-	*
		10480 (Pk)	54.03	68.23	-14.20

Table 19: 802.11 a 24 Mbps Internal Antenna

Channel Frequency (MHz)	Polarization	Measured Frequency (MHz)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5180.00	Vertical	5150 (Pk)	47.27	74.00	-26.73
		5150 (Av)	33.51	54.00	-20.49
		5180 (Pk)	101.37	-	*
		5180 (Av)	92.04	-	*
		10360 (Pk)	55.09	68.23	-13.14
	Horizontal	5150 (Pk)	48.91	74.00	-25.09
		5150 (Av)	35.55	54.00	-18.45
		5180 (Pk)	102.26	-	*
		5180 (Av)	94.45	-	*
		10360 (Pk)	54.34	68.23	-13.89

5200.00	Vertical	5200(Pk)	102.81	-	*
		5200(Av)	93.57	-	*
		10400 (Pk)	54.81	68.23	-13.42
	Horizontal	5200(Pk)	103.60	-	*
		5200(Av)	94.89	-	*
		10400 (Pk)	54.16	68.23	-14.07
5240.00	Vertical	5240 (Pk)	101.94	-	*
		5240 (Av)	92.99	-	*
		10480 (Pk)	54.41	68.23	-13.82
	Horizontal	5240 (Pk)	104.10	-	*
		5240 (Av)	94.85	-	*
		10480 (Pk)	54.43	68.23	-13.80

Table 20: 802.11 a 54 Mbps Internal Antenna

Channel Frequency (MHz)	Polarization	Measured Frequency (MHz)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5180.00	Vertical	5150 (Pk)	46.60	74.00	-27.40
		5150 (Av)	33.13	54.00	-20.87
		5180 (Pk)	100.70	-	*
		5180 (Av)	91.66	-	*
		10360 (Pk)	54.42	68.23	-13.81
	Horizontal	5150 (Pk)	48.53	74.00	-25.47
		5150 (Av)	34.88	54.00	-19.12
		5180 (Pk)	101.88	-	*
		5180 (Av)	93.78	-	*
		10360 (Pk)	53.96	68.23	-14.27

5200.00	Vertical	5200(Pk)	102.14	-	*
		5200(Av)	93.19	-	*
		10400 (Pk)	54.14	68.23	-14.09
	Horizontal	5200(Pk)	103.22	-	*
		5200(Av)	94.22	-	*
		10400 (Pk)	53.78	68.23	-14.45
5240.00	Vertical	5240 (Pk)	102.22	-	*
		5240 (Av)	93.70	-	*
		10480 (Pk)	54.69	68.23	-13.54
	Horizontal	5240 (Pk)	104.81	-	*
		5240 (Av)	95.13	-	*
		10480 (Pk)	55.14	68.23	-13.09

Table 21: 802.11 n HT20 MCS0 Internal Antenna

Channel Frequency (MHz)	Polarization	Measured Frequency (MHz)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5180.00	Vertical	5150 (Pk)	60.22	74.00	-13.78
		5150 (Av)	49.68	54.00	-4.32
		5180 (Pk)	96.04	-	*
		5180 (Av)	87.80	-	*
		10360 (Pk)	53.88	68.23	-14.35
	Horizontal	5150 (Pk)	56.61	74.00	-17.39
		5150 (Av)	45.33	54.00	-8.67
		5180 (Pk)	93.82	-	*
		5180 (Av)	86.29	-	*
		10360 (Pk)	53.45	68.23	-14.78

5200.00	Vertical	5200(Pk)	100.80	-	*
		5200(Av)	93.96	-	*
		10400 (Pk)	54.12	68.23	-14.11
	Horizontal	5200(Pk)	98.82	-	*
		5200(Av)	91.66	-	*
		10400 (Pk)	53.86	68.23	-14.37
5240.00	Vertical	5240 (Pk)	101.67	-	*
		5240 (Av)	94.28	-	*
		10480 (Pk)	53.74	68.23	-14.49
	Horizontal	5240 (Pk)	99.53	-	*
		5240 (Av)	92.78	-	*
		10480 (Pk)	54.06	68.23	-14.17

Table 22: 802.11 n HT20 MCS7 Internal Antenna

Channel Frequency (MHz)	Polarization	Measured Frequency (MHz)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5180.00	Vertical	5150 (Pk)	46.76	74.00	-27.24
		5150 (Av)	33.51	54.00	-20.49
		5180 (Pk)	100.02	-	*
		5180 (Av)	92.81	-	*
		10360 (Pk)	54.78	68.23	-13.45
	Horizontal	5150 (Pk)	46.05	74.00	-27.95
		5150 (Av)	33.11	54.00	-20.89
		5180 (Pk)	97.78	-	*
		5180 (Av)	90.69	-	*
		10360 (Pk)	53.89	68.23	-14.34

5200.00	Vertical	5200(Pk)	101.24	-	*
		5200(Av)	94.13	-	*
		10400 (Pk)	53.66	68.23	-14.57
	Horizontal	5200(Pk)	98.46	-	*
		5200(Av)	92.03	-	*
		10400 (Pk)	53.68	68.23	-14.55
5240.00	Vertical	5240 (Pk)	101.82	-	*
		5240 (Av)	94.19	-	*
		10480 (Pk)	54.48	68.23	-13.75
	Horizontal	5240 (Pk)	99.56	-	*
		5240 (Av)	92.86	-	*
		10480 (Pk)	54.45	68.23	-13.78

Table 23: 802.11 n HT20 MCS15 Internal Antenna

Channel Frequency (MHz)	Polarization	Measured Frequency (MHz)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5180.00	Vertical	5150 (Pk)	50.71	74.00	-23.29
		5150 (Av)	33.34	54.00	-20.66
		5180 (Pk)	100.52	-	*
		5180 (Av)	93.34	-	*
		10360 (Pk)	54.38	68.23	-13.85
	Horizontal	5150 (Pk)	46.71	74.00	-27.29
		5150 (Av)	33.26	54.00	-20.74
		5180 (Pk)	98.07	-	*
		5180 (Av)	90.95	-	*
		10360 (Pk)	54.72	68.23	-13.51

5200.00	Vertical	5200(Pk)	100.52	-	*
		5200(Av)	93.10	-	*
		10400 (Pk)	54.78	68.23	-13.45
	Horizontal	5200(Pk)	98.17	-	*
		5200(Av)	90.76	-	*
		10400 (Pk)	54.12	68.23	-14.11
5240.00	Vertical	5240 (Pk)	101.69	-	*
		5240 (Av)	94.41	-	*
		10480 (Pk)	54.60	68.23	-13.63
	Horizontal	5240 (Pk)	100.09	-	*
		5240 (Av)	92.54	-	*
		10480 (Pk)	54.30	68.23	-13.93

Table 24: 802.11 n HT40 MCS0 Internal Antenna

Channel Frequency (MHz)	Polarization	Measured Frequency (MHz)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5190.00	Vertical	5190 (Pk)	96.04	-	*
		5190 (Av)	88.35	-	*
		10380 (Pk)	53.78	68.23	-14.45
	Horizontal	5190 (Pk)	93.82	-	*
		5190 (Av)	86.87	-	*
		10380 (Pk)	54.38	68.23	-13.85
5230.00	Vertical	5230 (Pk)	96.04	-	*
		5230 (Av)	87.80	-	*
		10460 (Pk)	54.34	68.23	-13.89
		5350 (Pk)	47.24	74.00	-26.76
		5350 (Av)	33.82	54.00	-20.18

5230.00	Horizontal	5230 (Pk)	93.82	-	*
		5230 (Av)	86.67	-	*
		10460 (Pk)	54.07	68.23	-14.16
		5350 (Pk)	47.07	74.00	-26.93
		5350 (Av)	33.18	54.00	-20.82

Table 25: 802.11 n HT40 MCS7 Internal Antenna

Channel Frequency (MHz)	Polarization	Measured Frequency (MHz)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5190.00	Vertical	5190 (Pk)	98.48	-	*
		5190 (Av)	89.61	-	*
		10380 (Pk)	53.78	68.23	-14.45
	Horizontal	5190 (Pk)	96.90	-	*
		5190 (Av)	87.49	-	*
		10380 (Pk)	53.89	68.23	-14.34
5230.00	Vertical	5230 (Pk)	100.45	-	*
		5230 (Av)	91.60	-	*
		10460 (Pk)	53.94	68.23	-14.29
		5350 (Pk)	47.41	74.00	-26.59
		5350 (Av)	34.22	54.00	-19.78
	Horizontal	5230 (Pk)	98.13	-	*
		5230 (Av)	88.46	-	*
		10460 (Pk)	53.79	68.23	-14.44
		5350 (Pk)	46.22	74.00	-27.78
		5350 (Av)	33.20	54.00	-20.80

Table 26: 802.11 n HT40 MCS15 Internal Antenna

Channel Frequency (MHz)	Polarization	Measured Frequency (MHz)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5190.00	Vertical	5190 (Pk)	96.77	-	*
		5190 (Av)	89.31	-	*
		10380 (Pk)	53.82	68.23	-14.41
	Horizontal	5190 (Pk)	93.81	-	*
		5190 (Av)	85.53	-	*
		10380 (Pk)	53.92	68.23	-14.31
5230.00	Vertical	5230 (Pk)	97.67	-	*
		5230 (Av)	89.83	-	*
		10460 (Pk)	53.98	68.23	-14.25
		5350 (Pk)	46.92	74.00	-27.08
		5350 (Av)	34.34	54.00	-19.66
	Horizontal	5230 (Pk)	95.69	-	*
		5230 (Av)	86.75	-	*
		10460 (Pk)	54.12	68.23	-14.11
		5350 (Pk)	45.56	74.00	-28.44
		5350 (Av)	33.15	54.00	-20.85

Table 27: 802.11 a 6 Mbps External Antenna

Channel Frequency (MHz)	Polarization	Measured Frequency (MHz)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5180	Vertical	5150 (Pk)	46.13	74	-27.87
		5150 (Av)	33.28	54	-20.72
		5180 (Pk)	102.3	-	-
		5180 (Av)	94.61	-	-
		10360 (Pk)	54.2	68.23	-14.03

5180.00	Horizontal	5150 (Pk)	43.58	74	-30.42
		5150 (Av)	31.32	54	-22.68
		5180 (Pk)	95.51	-	-
		5180 (Av)	86.96	-	-
		10360 (Pk)	53.55	68.23	-14.68
5200	Vertical	5200(Pk)	101.23	-	-
		5200(Av)	92.23	-	-
		10400 (Pk)	53.24	68.23	-14.99
	Horizontal	5200(Pk)	97.84	-	-
		5200(Av)	90.84	-	-
		10400 (Pk)	53.23	68.23	-15
5240	Vertical	5240 (Pk)	105.8	-	-
		5240 (Av)	98	-	-
		10480 (Pk)	53.73	68.23	-14.5
	Horizontal	5240 (Pk)	97.69	-	-
		5240 (Av)	89.96	-	-
		10480 (Pk)	53.64	68.23	-14.59

Table 28: 802.11 n HT20 MCS0 External Antenna

Channel Frequency (MHz)	Polarization	Measured Frequency (MHz)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5180	Vertical	5150 (Pk)	60.22	74	-13.78
		5150 (Av)	49.68	54	-4.32
		5180 (Pk)	96.04	-	-
		5180 (Av)	88.35	-	-
		10360 (Pk)	53.82	68.23	-14.41

5180.00	Horizontal	5150 (Pk)	56.61	74	-17.39
		5150 (Av)	45.33	54	-8.67
		5180 (Pk)	93.82	-	-
		5180 (Av)	86.87	-	-
		10360 (Pk)	53.74	68.23	-14.49
5200	Vertical	5200(Pk)	104.67	-	-
		5200(Av)	97.49	-	-
		10400 (Pk)	53.41	68.23	-14.82
	Horizontal	5200(Pk)	96.82	-	-
		5200(Av)	89.26	-	-
		10400 (Pk)	53.95	68.23	-14.28
5240	Vertical	5240 (Pk)	105.52	-	-
		5240 (Av)	98.86	-	-
		10480 (Pk)	53.82	68.23	-14.41
	Horizontal	5240 (Pk)	97.81	-	-
		5240 (Av)	90.55	-	-
		10480 (Pk)	53.05	68.23	-15.18

Table 29 : 802.11 n HT20 MCS7 External Antenna

Channel Frequency (MHz)	Polarization	Measured Frequency (MHz)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5180	Vertical	5150 (Pk)	60.71	74	-13.29
		5150 (Av)	50.49	54	-3.51
		5180 (Pk)	96.53	-	-
		5180 (Av)	89.16	-	-
		10360 (Pk)	54.31	68.23	-13.92

5180.00	Horizontal	5150 (Pk)	57.42	74	-16.58
		5150 (Av)	45.82	54	-8.18
		5180 (Pk)	94.63	-	-
		5180 (Av)	87.36	-	-
		10360 (Pk)	54.55	68.23	-13.68
5200	Vertical	5200(Pk)	105.16	-	-
		5200(Av)	98.3	-	-
		10400 (Pk)	53.9	68.23	-14.33
	Horizontal	5200(Pk)	97.63	-	-
		5200(Av)	89.75	-	-
		10400 (Pk)	54.76	68.23	-13.47
5240	Vertical	5240 (Pk)	105.8	-	-
		5240 (Av)	99.21	-	-
		10480 (Pk)	54.1	68.23	-14.13
	Horizontal	5240 (Pk)	98.16	-	-
		5240 (Av)	90.83	-	-
		10480 (Pk)	53.4	68.23	-14.83

Table 30: 802.11 n HT40 MCS7 External Antenna

Channel Frequency (MHz)	Polarization	Measured Frequency (MHz)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5190	Vertical	5190 (Pk)	102.75	-	*
		5190 (Av)	94.62	-	*
		10380 (Pk)	53.3	68.23	-14.93
	Horizontal	5190 (Pk)	93.2	-	-
		5190 (Av)	86.43	-	-
		10380 (Pk)	53.61	68.23	-14.62

5230	Vertical	5230 (Pk)	101.89	-	-
		5230 (Av)	92.87	-	-
		10460 (Pk)	53.94	68.23	-14.29
		5350 (Pk)	48.25	74	-25.75
		5350 (Av)	35.15	54	-18.85
	Horizontal	5230 (Pk)	100.29	-	-
		5230 (Av)	90.23	-	-
		10460 (Pk)	53.97	68.23	-14.26
		5350 (Pk)	47.12	74	-26.88
		5350 (Av)	34.15	54	-19.85

UNII-3 Band: 5725 MHz to 5850 MHz

Table 31: 802.11 a 6 Mbps Internal Antenna

Channel Frequency (MHz)	Polarization	Measured Frequency (MHz)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5745.00	Vertical	5650 (Pk)	46.18	68.23	-22.05
		5700 (Pk)	46.18	105.23	-59.05
		5720 (Pk)	58.70	110.83	-52.13
		5725 (Pk)	64.95	122.23	-57.28
		5745 (Pk)	103.83	-	*
		5745 (Av)	96.01	-	*
		11490 (Pk)	54.52	68.23	-13.71
	Horizontal	5650 (Pk)	44.92	68.23	-23.31
		5700 (Pk)	45.32	105.23	-59.91
		5720 (Pk)	53.33	110.83	-57.50
		5725 (Pk)	61.49	122.23	-60.74
		5745 (Pk)	103.01	-	*
		5745 (Av)	95.13	-	*
		11490 (Pk)	54.94	68.23	-13.29

5785.00	Vertical	5785 (Pk)	102.53	-	*
		5785 (Av)	94.18	-	*
		11570 (Pk)	54.09	68.23	-14.14
	Horizontal	5785 (Pk)	101.03	-	*
		5785 (Av)	93.22	-	*
		11570 (Pk)	54.18	68.23	-14.05
5825.00	Vertical	5825 (Pk)	100.86	-	*
		5825 (Av)	92.86	-	*
		5850 (Pk)	45.74	122.23	-76.49
		5855 (Pk)	43.77	110.83	-67.06
		5875 (Pk)	44.35	105.23	-60.88
		5925 (Pk)	44.34	68.23	-23.89
		11650 (Pk)	54.66	68.23	-13.57
	Horizontal	5825 (Pk)	99.29	-	*
		5825 (Av)	91.22	-	*
		5850 (Pk)	47.10	122.23	-75.13
		5855 (Pk)	45.43	110.83	-65.40
		5875 (Pk)	45.00	105.23	-60.23
		5925 (Pk)	44.26	68.23	-23.97
		11650 (Pk)	55.05	68.23	-13.18

Table 32: 802.11 a 24 Mbps Internal Antenna

Channel Frequency (MHz)	Polarization	Measured Frequency (MHz)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5745.00	Vertical	5650 (Pk)	45.80	68.23	-22.43
		5700 (Pk)	45.66	105.23	-59.57
		5720 (Pk)	58.32	110.83	-52.51
		5725 (Pk)	64.43	122.23	-57.80
		5745 (Pk)	103.45	-	*
		5745 (Av)	95.49	-	*
		11490 (Pk)	54.14	68.23	-14.09

5745.00	Horizontal	5650 (Pk)	44.40	68.23	-23.83
		5700 (Pk)	44.94	105.23	-60.29
		5720 (Pk)	52.81	110.83	-58.02
		5725 (Pk)	61.11	122.23	-61.12
		5745 (Pk)	102.49	-	*
		5745 (Av)	94.75	-	*
		11490 (Pk)	54.42	68.23	-13.81
5785.00	Vertical	5785 (Pk)	101.97	-	*
		5785 (Av)	94.46	-	*
		11570 (Pk)	53.53	68.23	-14.70
	Horizontal	5785 (Pk)	101.31	-	*
		5785 (Av)	92.66	-	*
		11570 (Pk)	54.46	68.23	-13.77
5825.00	Vertical	5825 (Pk)	102.59	-	*
		5825 (Av)	93.36	-	*
		5850 (Pk)	45.83	122.23	-76.40
		5855 (Pk)	44.06	110.83	-66.77
		5875 (Pk)	44.96	105.23	-60.27
		5925 (Pk)	44.04	68.23	-24.19
		11650 (Pk)	54.86	68.23	-13.37
	Horizontal	5825 (Pk)	101.56	-	*
		5825 (Av)	92.78	-	*
		5850 (Pk)	47.77	122.23	-74.46
		5855 (Pk)	46.49	110.83	-64.34
		5875 (Pk)	44.91	105.23	-60.32
		5925 (Pk)	43.75	68.23	-24.48
		11650 (Pk)	54.71	68.23	-13.52

Table 33: 802.11 a 54 Mbps Internal Antenna

Channel Frequency (MHz)	Polarization	Measured Frequency (MHz)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5745.00	Vertical	5650 (Pk)	46.72	68.23	-21.51
		5700 (Pk)	47.64	105.23	-57.59
		5720 (Pk)	54.06	110.83	-56.77
		5725 (Pk)	62.00	122.23	-60.23
		5745 (Pk)	103.89	-	*
		5745 (Av)	94.55	-	*
		11490 (Pk)	54.93	68.23	-13.30
	Horizontal	5650 (Pk)	45.73	68.23	-22.50
		5700 (Pk)	46.03	105.23	-59.20
		5720 (Pk)	49.66	110.83	-61.17
		5725 (Pk)	58.17	122.23	-64.06
		5745 (Pk)	103.74	-	*
		5745 (Av)	95.47	-	*
		11490 (Pk)	55.19	68.23	-13.04
5785.00	Vertical	5785 (Pk)	102.35	-	*
		5785 (Av)	93.70	-	*
		11570 (Pk)	53.91	68.23	-14.32
	Horizontal	5785 (Pk)	100.55	-	*
		5785 (Av)	93.04	-	*
		11570 (Pk)	54.46	68.23	-13.77
5825.00	Vertical	5825 (Pk)	101.08	-	*
		5825 (Av)	92.96	-	*
		5850 (Pk)	43.60	122.23	-78.63
		5855 (Pk)	43.67	110.83	-67.16
		5875 (Pk)	44.31	105.23	-60.92
		5925 (Pk)	44.08	68.23	-24.15
		11650 (Pk)	54.12	68.23	-14.11

5825.00	Horizontal	5825 (Pk)	101.37	-	*
		5825 (Av)	92.97	-	*
		5850 (Pk)	44.77	122.23	-77.46
		5855 (Pk)	44.84	110.83	-65.99
		5875 (Pk)	45.06	105.23	-60.17
		5925 (Pk)	44.87	68.23	-23.36
		11650 (Pk)	53.98	68.23	-14.25

Table 34: 802.11 n HT20 MCS0 Internal Antenna

Channel Frequency (MHz)	Polarization	Measured Frequency (MHz)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5745.00	Vertical	5650 (Pk)	43.57	68.23	-24.66
		5700 (Pk)	43.35	105.23	-61.88
		5720 (Pk)	48.92	110.83	-61.91
		5725 (Pk)	56.22	122.23	-66.01
		5745 (Pk)	98.88	-	*
		5745 (Av)	92.43	-	*
		11490 (Pk)	54.55	68.23	-13.68
	Horizontal	5650 (Pk)	43.48	68.23	-24.75
		5700 (Pk)	43.43	105.23	-61.80
		5720 (Pk)	45.90	110.83	-64.93
		5725 (Pk)	53.42	122.23	-68.81
		5745 (Pk)	98.23	-	*
		5745 (Av)	91.72	-	*
		11490 (Pk)	54.91	68.23	-13.32
5785.00	Vertical	5785 (Pk)	102.08	-	*
		5785 (Av)	94.24	-	*
		11570 (Pk)	53.64	68.23	-14.59
	Horizontal	5785 (Pk)	101.09	-	*
		5785 (Av)	92.77	-	*
		11570 (Pk)	55.00	68.23	-13.23

5825.00	Vertical	5825 (Pk)	100.08	-	*
		5825 (Av)	93.23	-	*
		5850 (Pk)	48.34	122.23	-73.89
		5855 (Pk)	44.66	110.83	-66.17
		5875 (Pk)	43.58	105.23	-61.65
		5925 (Pk)	43.82	68.23	-24.41
		11650 (Pk)	53.97	68.23	-14.26
	Horizontal	5825 (Pk)	99.05	-	*
		5825 (Av)	91.31	-	*
		5850 (Pk)	51.05	122.23	-71.18
		5855 (Pk)	46.77	110.83	-64.06
		5875 (Pk)	44.76	105.23	-60.47
		5925 (Pk)	44.57	68.23	-23.66
		11650 (Pk)	54.65	68.23	-13.58

Table 35: 802.11 n HT20 MCS7 Internal Antenna

Channel Frequency (MHz)	Polarization	Measured Frequency (MHz)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5745.00	Vertical	5650 (Pk)	46.91	68.23	-21.32
		5700 (Pk)	35.53	105.23	-69.70
		5720 (Pk)	42.00	110.83	-68.83
		5725 (Pk)	65.30	122.23	-56.93
		5745 (Pk)	100.97	-	*
		5745 (Av)	93.86	-	*
		11490 (Pk)	54.61	68.23	-13.62
	Horizontal	5650 (Pk)	45.58	68.23	-22.65
		5700 (Pk)	34.58	105.23	-70.65
		5720 (Pk)	56.57	110.83	-54.26
		5725 (Pk)	66.58	122.23	-55.65
		5745 (Pk)	101.53	-	*
		5745 (Av)	94.10	-	*
		11490 (Pk)	54.25	68.23	-13.98

5785.00	Vertical	5785 (Pk)	100.72	-	*
		5785 (Av)	94.62	-	*
		11570 (Pk)	54.35	68.23	-13.88
	Horizontal	5785 (Pk)	100.16	-	*
		5785 (Av)	93.21	-	*
		11570 (Pk)	54.32	68.23	-13.91
5825.00	Vertical	5825 (Pk)	101.06	-	*
		5825 (Av)	94.41	-	*
		5850 (Pk)	49.28	122.23	-72.95
		5855 (Pk)	45.85	110.83	-64.98
		5875 (Pk)	45.48	105.23	-59.75
		5925 (Pk)	44.36	68.23	-23.87
		11650 (Pk)	55.39	68.23	-12.84
	Horizontal	5825 (Pk)	99.56	-	*
		5825 (Av)	93.13	-	*
		5850 (Pk)	51.24	122.23	-70.99
		5855 (Pk)	47.22	110.83	-63.61
		5875 (Pk)	33.88	105.23	-71.35
		5925 (Pk)	45.17	68.23	-23.06
		11650 (Pk)	55.41	68.23	-12.82

Table 36: 802.11 n HT20 MCS15 Internal Antenna

Channel Frequency (MHz)	Polarization	Measured Frequency (MHz)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5745.00	Vertical	5650 (Pk)	47.52	68.23	-20.71
		5700 (Pk)	35.96	105.23	-69.27
		5720 (Pk)	42.61	110.83	-68.22
		5725 (Pk)	65.73	122.23	-56.50
		5745 (Pk)	101.58	-	*
		5745 (Av)	94.29	-	*
		11490 (Pk)	55.22	68.23	-13.01

5745.00	Horizontal	5650 (Pk)	46.01	68.23	-22.22
		5700 (Pk)	35.19	105.23	-70.04
		5720 (Pk)	57.00	110.83	-53.83
		5725 (Pk)	67.19	122.23	-55.04
		5745 (Pk)	101.96	-	*
		5745 (Av)	94.71	-	*
		11490 (Pk)	54.68	68.23	-13.55
5785.00	Vertical	5785 (Pk)	101.33	-	*
		5785 (Av)	95.05	-	*
		11570 (Pk)	54.96	68.23	-13.27
	Horizontal	5785 (Pk)	100.59	-	*
		5785 (Av)	93.82	-	*
		11570 (Pk)	54.75	68.23	-13.48
5825.00	Vertical	5825 (Pk)	100.39	-	*
		5825 (Av)	93.95	-	*
		5850 (Pk)	48.61	122.23	-73.62
		5855 (Pk)	45.39	110.83	-65.44
		5875 (Pk)	44.81	105.23	-60.42
		5925 (Pk)	43.90	68.23	-24.33
		11650 (Pk)	54.72	68.23	-13.51
	Horizontal	5825 (Pk)	99.10	-	*
		5825 (Av)	92.46	-	*
		5850 (Pk)	50.78	122.23	-71.45
		5855 (Pk)	46.55	110.83	-64.28
		5875 (Pk)	33.42	105.23	-71.81
		5925 (Pk)	44.50	68.23	-23.73
		11650 (Pk)	54.95	68.23	-13.28

Table 37: 802.11 n HT40 MCS0 Internal Antenna

Channel Frequency (MHz)	Polarization	Measured Frequency (MHz)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5755.00	Vertical	5650 (Pk)	43.16	68.23	-25.07
		5700 (Pk)	47.79	105.23	-57.44
		5720 (Pk)	62.17	110.83	-48.66
		5725 (Pk)	61.91	122.23	-60.32
		5755 (Pk)	94.86	-	*
		5755 (Av)	87.68	-	*
		11510 (Pk)	54.13	68.23	-14.10
	Horizontal	5650 (Pk)	44.51	68.23	-23.72
		5700 (Pk)	49.64	105.23	-55.59
		5720 (Pk)	64.58	110.83	-46.25
		5725 (Pk)	64.23	122.23	-58.00
		5755 (Pk)	96.75	-	*
		5755 (Av)	89.44	-	*
		11510 (Pk)	54.37	68.23	-13.86
5795.00	Vertical	5795 (Pk)	92.85	-	*
		5795(Av)	85.64	-	*
		5850 (Pk)	43.02	122.23	-79.21
		5855 (Pk)	44.53	110.83	-66.30
		5875 (Pk)	31.63	105.23	-73.60
		5925 (Pk)	43.75	68.23	-24.48
		11590 (Pk)	54.50	68.23	-13.73
	Horizontal	5795 (Pk)	96.10	-	*
		5795(Av)	88.35	-	*
		5850 (Pk)	43.53	122.23	-78.70
		5855 (Pk)	44.06	110.83	-66.77
		5875 (Pk)	43.45	105.23	-61.78
		5925 (Pk)	43.31	68.23	-24.92
		11590 (Pk)	54.65	68.23	-13.58

Table 38: 802.11 n HT40 MCS7 Internal Antenna

Channel Frequency (MHz)	Polarization	Measured Frequency (MHz)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5755.00	Vertical	5650 (Pk)	43.94	68.23	-24.29
		5700 (Pk)	52.15	105.23	-53.08
		5720 (Pk)	66.01	110.83	-44.82
		5725 (Pk)	63.39	122.23	-58.84
		5755 (Pk)	96.36	-	*
		5755 (Av)	89.24	-	*
		11510 (Pk)	54.23	68.23	-14.00
	Horizontal	5650 (Pk)	43.12	68.23	-25.11
		5700 (Pk)	54.37	105.23	-50.86
		5720 (Pk)	69.73	110.83	-41.10
		5725 (Pk)	67.35	122.23	-54.88
		5755 (Pk)	99.50	-	*
		5755 (Av)	91.08	-	*
		11510 (Pk)	54.72	68.23	-13.51
5795.00	Vertical	5795 (Pk)	94.38	-	*
		5795(Av)	86.76	-	*
		5850 (Pk)	43.70	122.23	-78.53
		5855 (Pk)	44.18	110.83	-66.65
		5875 (Pk)	43.25	105.23	-61.98
		5925 (Pk)	44.84	68.23	-23.39
		11590 (Pk)	54.70	68.23	-13.53
	Horizontal	5795 (Pk)	97.64	-	*
		5795(Av)	90.88	-	*
		5850 (Pk)	44.35	122.23	-77.88
		5855 (Pk)	43.95	110.83	-66.88
		5875 (Pk)	44.08	105.23	-61.15
		5925 (Pk)	43.61	68.23	-24.62
		11590 (Pk)	53.91	68.23	-14.32

Table 39: 802.11 n HT40 MCS15 Internal Antenna

Channel Frequency (MHz)	Polarization	Measured Frequency (MHz)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5755.00	Vertical	5650 (Pk)	43.51	68.23	-24.72
		5700 (Pk)	47.43	105.23	-57.80
		5720 (Pk)	62.96	110.83	-47.87
		5725 (Pk)	59.86	122.23	-27.15
		5755 (Pk)	95.08	-	*
		5755 (Av)	86.45	-	*
		11510 (Pk)	54.50	68.23	-13.73
	Horizontal	5650 (Pk)	43.86	68.23	-24.37
		5700 (Pk)	46.96	105.23	-58.27
		5720 (Pk)	64.83	110.83	-46.00
		5725 (Pk)	64.01	122.23	-58.22
		5755 (Pk)	96.47	-	*
		5755 (Av)	88.52	-	*
		11510 (Pk)	54.43	68.23	-13.80
5795.00	Vertical	5795 (Pk)	92.53	-	*
		5795(Av)	84.02	-	*
		5850 (Pk)	43.40	122.23	-78.83
		5855 (Pk)	43.43	110.83	-67.40
		5875 (Pk)	43.60	105.23	-61.63
		5925 (Pk)	43.34	68.23	-24.89
		11590 (Pk)	54.12	68.23	-14.11
	Horizontal	5795 (Pk)	95.86	-	*
		5795(Av)	87.43	-	*
		5850 (Pk)	44.98	122.23	-77.25
		5855 (Pk)	44.13	110.83	-66.70
		5875 (Pk)	43.30	105.23	-61.93
		5925 (Pk)	45.37	68.23	-22.86
		11590 (Pk)	54.61	68.23	-13.62

Table 40: 802.11 a 54 Mbps External Antenna

Channel Frequency (MHz)	Polarization	Measured Frequency (MHz)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5745.00	Vertical	5650 (Pk)	46.28	68.23	-21.95
		5700 (Pk)	35.28	105.23	-69.95
		5720 (Pk)	56.01	110.83	-54.82
		5725 (Pk)	64.66	122.23	-57.57
		5745 (Pk)	106.40	-	-
		5745 (Av)	97.83	-	-
		11490 (Pk)	54.72	68.23	-13.51
	Horizontal	5650 (Pk)	43.09	68.23	-25.14
		5700 (Pk)	43.64	105.23	-61.59
		5720 (Pk)	49.49	110.83	-61.34
		5725 (Pk)	57.01	122.23	-65.22
		5745 (Pk)	97.48	-	-
		5745 (Av)	89.23	-	-
		11490 (Pk)	54.31	68.23	-13.92
5785.00	Vertical	5785 (Pk)	103.58	-	-
		5785 (Av)	93.22	-	-
		11570 (Pk)	55.14	68.23	-13.09
	Horizontal	5785 (Pk)	100.07	-	-
		5785 (Av)	94.27	-	-
		11570 (Pk)	53.98	68.23	-14.25
5825.00	Vertical	5825 (Pk)	103.12	-	-
		5825 (Av)	94.77	-	-
		5850 (Pk)	46.95	122.23	-75.28
		5855 (Pk)	45.07	110.83	-65.76
		5875 (Pk)	43.89	105.23	-61.34
		5925 (Pk)	43.87	68.23	-24.36
		11650 (Pk)	54.72	68.23	-13.51

5825.00	Horizontal	5825 (Pk)	95.16	-	-
		5825 (Av)	86.64	-	-
		5850 (Pk)	42.53	122.23	-79.70
		5855 (Pk)	43.13	110.83	-67.70
		5875 (Pk)	43.45	105.23	-61.78
		5925 (Pk)	42.65	68.23	-25.58
		11650 (Pk)	55.70	68.23	-12.53

Table 41: 802.11 n HT20 MCS 15 External Antenna

Channel Frequency (MHz)	Polarization	Measured Frequency (MHz)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5745.00	Vertical	5650 (Pk)	47.99	68.23	-20.24
		5700 (Pk)	36.85	105.23	-68.38
		5720 (Pk)	43.08	110.83	-67.75
		5725 (Pk)	66.62	122.23	-55.61
		5745 (Pk)	102.05	-	-
		5745 (Av)	95.18	-	-
		11490 (Pk)	55.69	68.23	-12.54
	Horizontal	5650 (Pk)	46.90	68.23	-21.33
		5700 (Pk)	35.66	105.23	-69.57
		5720 (Pk)	57.89	110.83	-52.94
		5725 (Pk)	67.66	122.23	-54.57
		5745 (Pk)	102.85	-	-
		5745 (Av)	95.18	-	-
		11490 (Pk)	55.57	68.23	-12.66
5785.00	Vertical	5785 (Pk)	103.36	-	-
		5785 (Av)	96.32	-	-
		11570 (Pk)	54.57	68.23	-13.66
	Horizontal	5785 (Pk)	94.11	-	-
		5785 (Av)	87.36	-	-
		11570 (Pk)	54.38	68.23	-13.85

5825.00	Vertical	5825 (Pk)	101.41	-	-
		5825 (Av)	94.82	-	-
		5850 (Pk)	51.94	122.23	-70.29
		5855 (Pk)	46.56	110.83	-64.27
		5875 (Pk)	44.21	105.23	-61.02
		5925 (Pk)	44.69	68.23	-23.54
		11650 (Pk)	54.68	68.23	-13.55
	Horizontal	5825 (Pk)	92.89	-	-
		5825 (Av)	86.14	-	-
		5850 (Pk)	45.42	122.23	-76.81
		5855 (Pk)	43.68	110.83	-67.15
		5875 (Pk)	43.07	105.23	-62.16
		5925 (Pk)	43.06	68.23	-25.17
		11650 (Pk)	54.33	68.23	-13.90

Table 42: 802.11 n HT40 MCS0 External Anternna

Channel Frequency (MHz)	Polarization	Measured Frequency (MHz)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5755.00	Vertical	5650 (Pk)	44.47	68.23	-23.76
		5700 (Pk)	52.66	105.23	-52.57
		5720 (Pk)	66.86	110.83	-43.97
		5725 (Pk)	66.86	122.23	-55.37
		5755 (Pk)	100.42	-	-
		5755 (Av)	92.97	-	-
		11510 (Pk)	54.37	68.23	-13.86
	Horizontal	5650 (Pk)	43.11	68.23	-25.12
		5700 (Pk)	45.93	105.23	-59.30
		5720 (Pk)	58.52	110.83	-52.31
		5725 (Pk)	57.92	122.23	-64.31
		5755 (Pk)	91.30	-	-
		5755 (Av)	83.83	-	-
		11510 (Pk)	54.51	68.23	-13.72

5795.00	Vertical	5795 (Pk)	99.04	-	-
		5795(Av)	91.21	-	-
		5850 (Pk)	44.55	122.23	-77.68
		5855 (Pk)	44.77	110.83	-66.06
		5875 (Pk)	44.16	105.23	-61.07
		5925 (Pk)	44.01	68.23	-24.22
		11590 (Pk)	54.33	68.23	-13.90
	Horizontal	5795 (Pk)	89.72	-	-
		5795(Av)	82.12	-	-
		5850 (Pk)	43.22	122.23	-79.01
		5855 (Pk)	42.87	110.83	-67.96
		5875 (Pk)	42.23	105.23	-63.00
		5925 (Pk)	43.06	68.23	-25.17
		11590 (Pk)	54.39	68.23	-13.84

Table 43: 802.11 n HT40 MCS15 External Antenna

Channel Frequency (MHz)	Polarization	Measured Frequency (MHz)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
5755.00	Vertical	5650 (Pk)	44.19	68.23	-24.04
		5700 (Pk)	48.02	105.23	-57.21
		5720 (Pk)	63.64	110.83	-47.19
		5725 (Pk)	60.45	122.23	-61.78
		5755 (Pk)	95.76	-	-
		5755 (Av)	87.04	-	-
		11510 (Pk)	55.18	68.23	-13.05
	Horizontal	5650 (Pk)	44.45	68.23	-23.78
		5700 (Pk)	47.64	105.23	-57.59
		5720 (Pk)	65.42	110.83	-45.41
		5725 (Pk)	64.69	122.23	-57.54
		5755 (Pk)	97.06	-	-
		5755 (Av)	89.20	-	-
		11510 (Pk)	55.02	68.23	-13.21

5795.00	Vertical	5795 (Pk)	98.64	-	-
		5795(Av)	90.48	-	-
		5850 (Pk)	46.06	122.23	-76.17
		5855 (Pk)	45.41	110.83	-65.42
		5875 (Pk)	44.90	105.23	-60.33
		5925 (Pk)	44.56	68.23	-23.67
		11590 (Pk)	54.92	68.23	-13.31
	Horizontal	5795 (Pk)	89.05	-	-
		5795(Av)	80.04	-	-
		5850 (Pk)	43.63	122.23	-78.60
		5855 (Pk)	42.38	110.83	-68.45
		5875 (Pk)	42.52	105.23	-62.71
		5925 (Pk)	43.50	68.23	-24.73
		11590 (Pk)	54.26	68.23	-13.97

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*****END OF TEST REPORT*****