



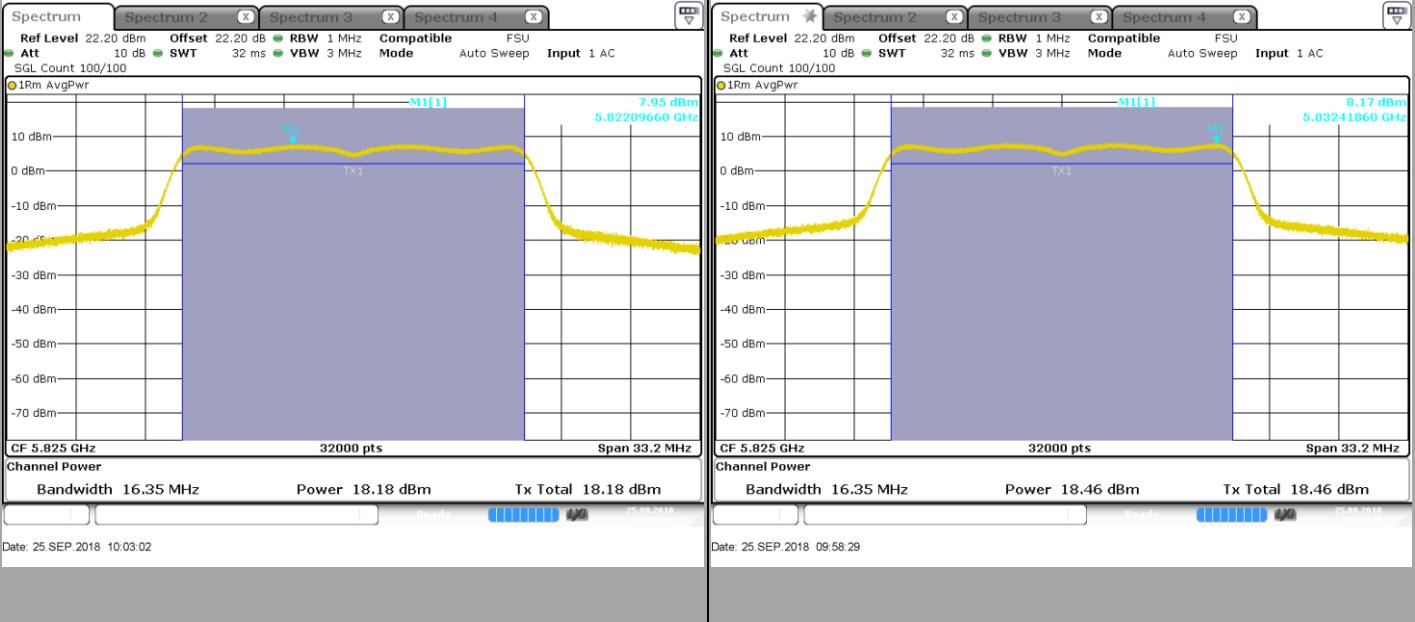
L C I E

802.11a

C13 (RBW = 1MHz)

Tx1 (Black)

Tx2 (White)

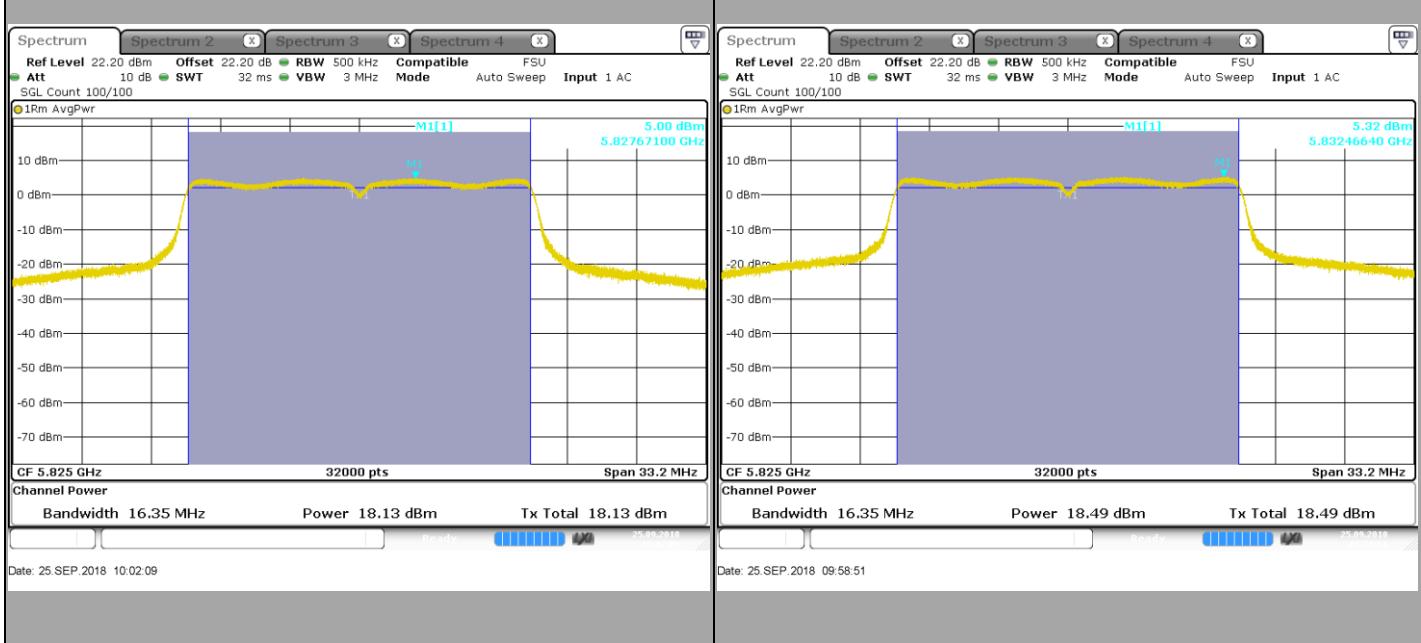


802.11a

C13 (RBW = 500kHz)

Tx1 (Black)

Tx2 (White)



TEST REPORT

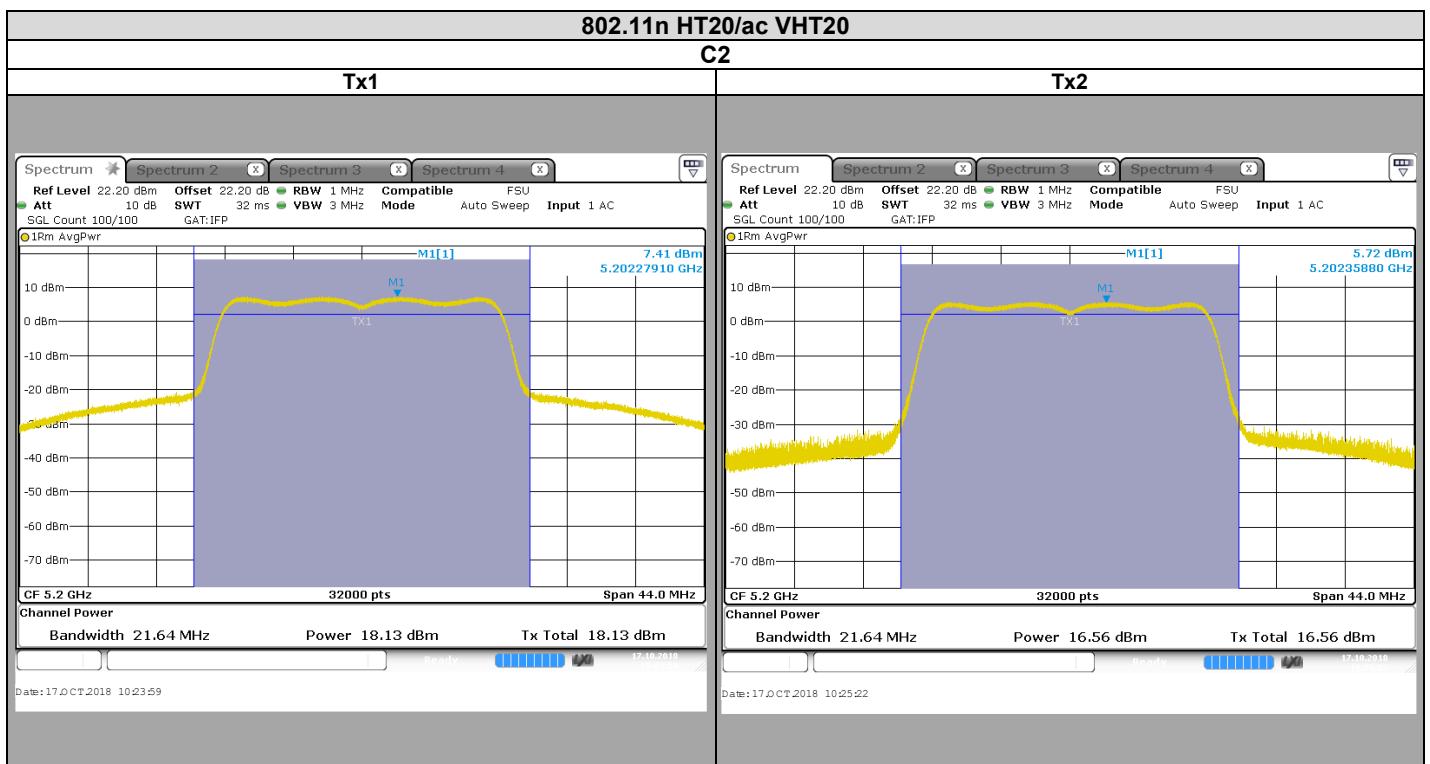
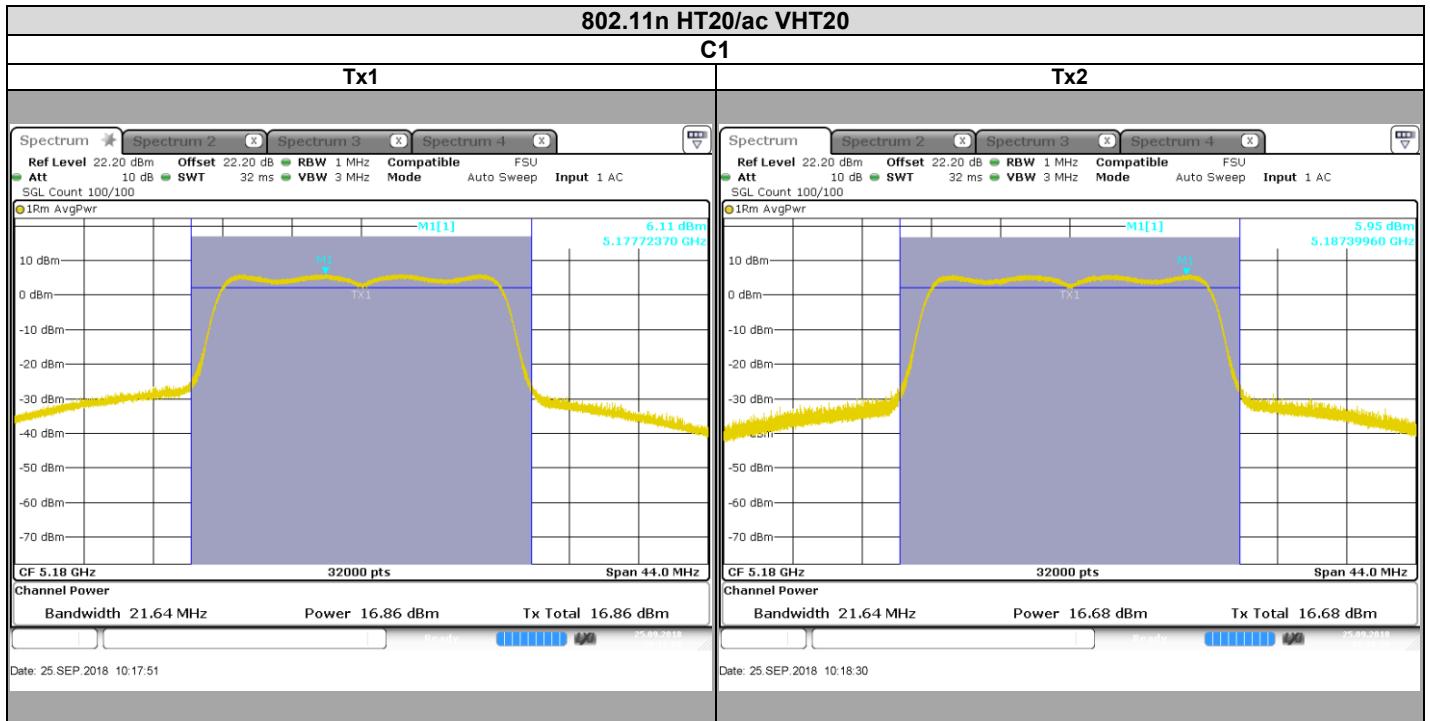
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L C I E



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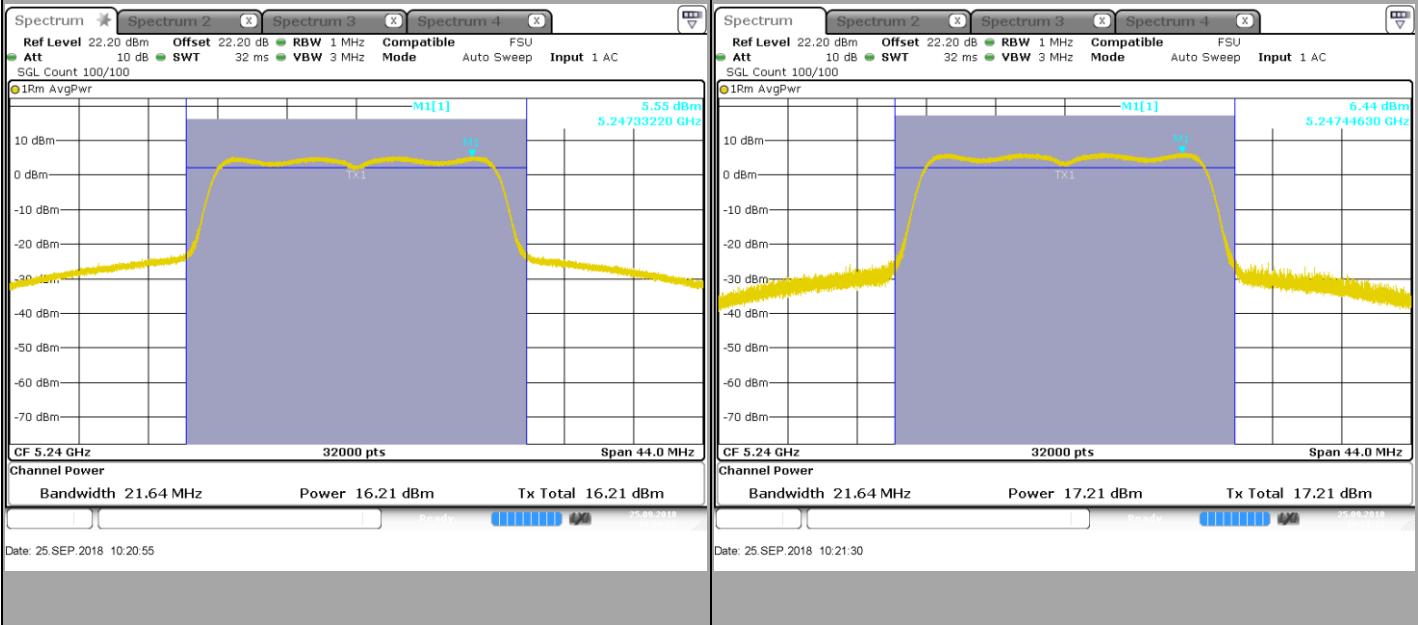
L C I E

802.11n HT20/ac VHT20

C3

Tx1

Tx2

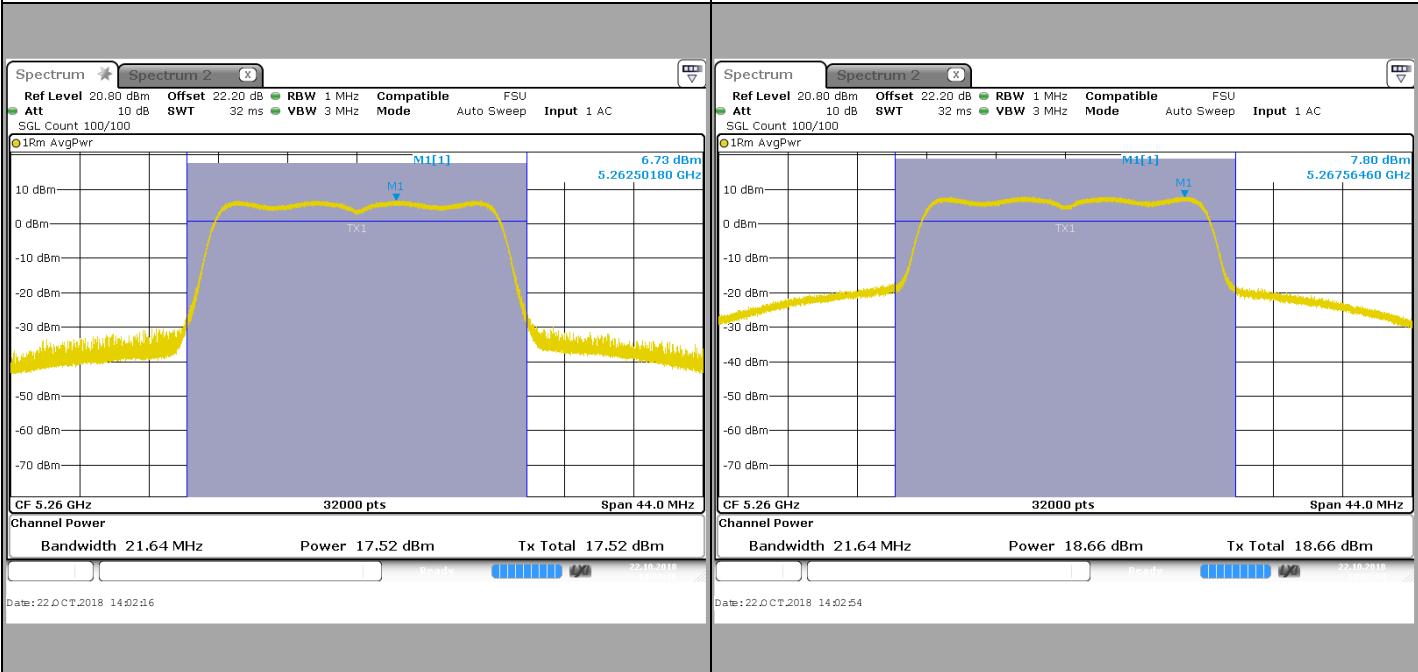


802.11n HT20/ac VHT20

C4

Tx1

Tx2



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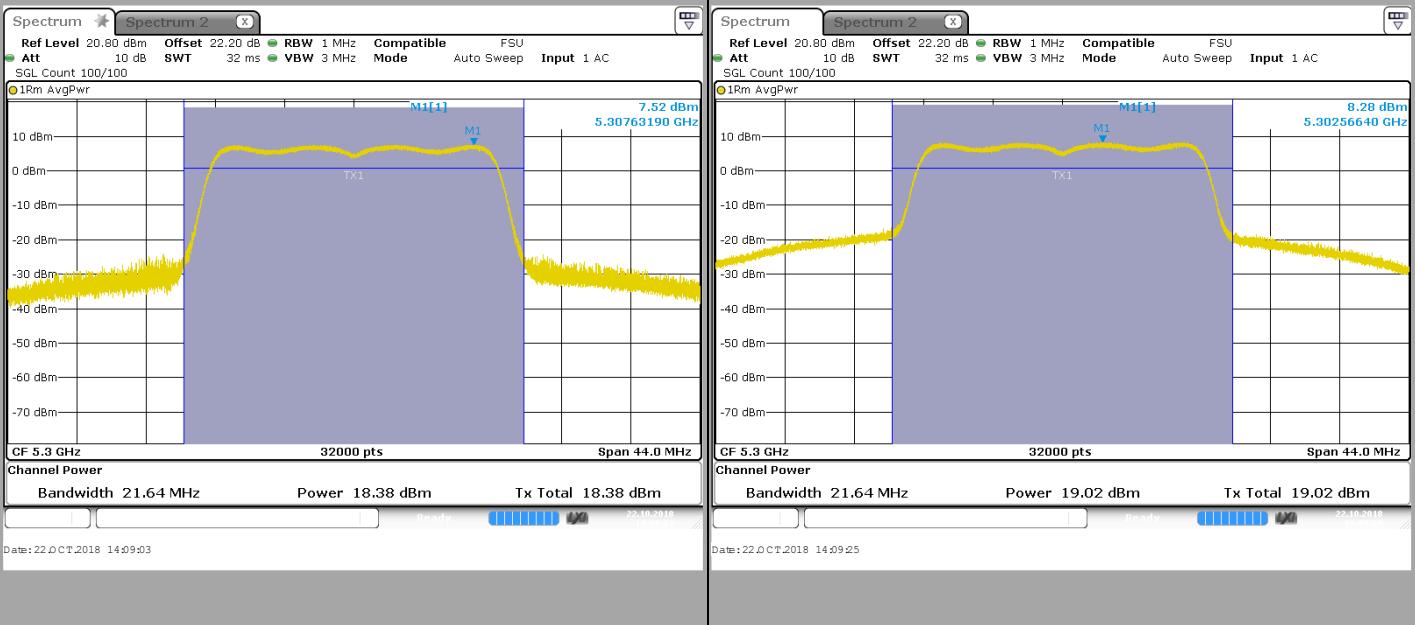
L C I E

802.11n HT20/ac VHT20

C5

Tx1

Tx2

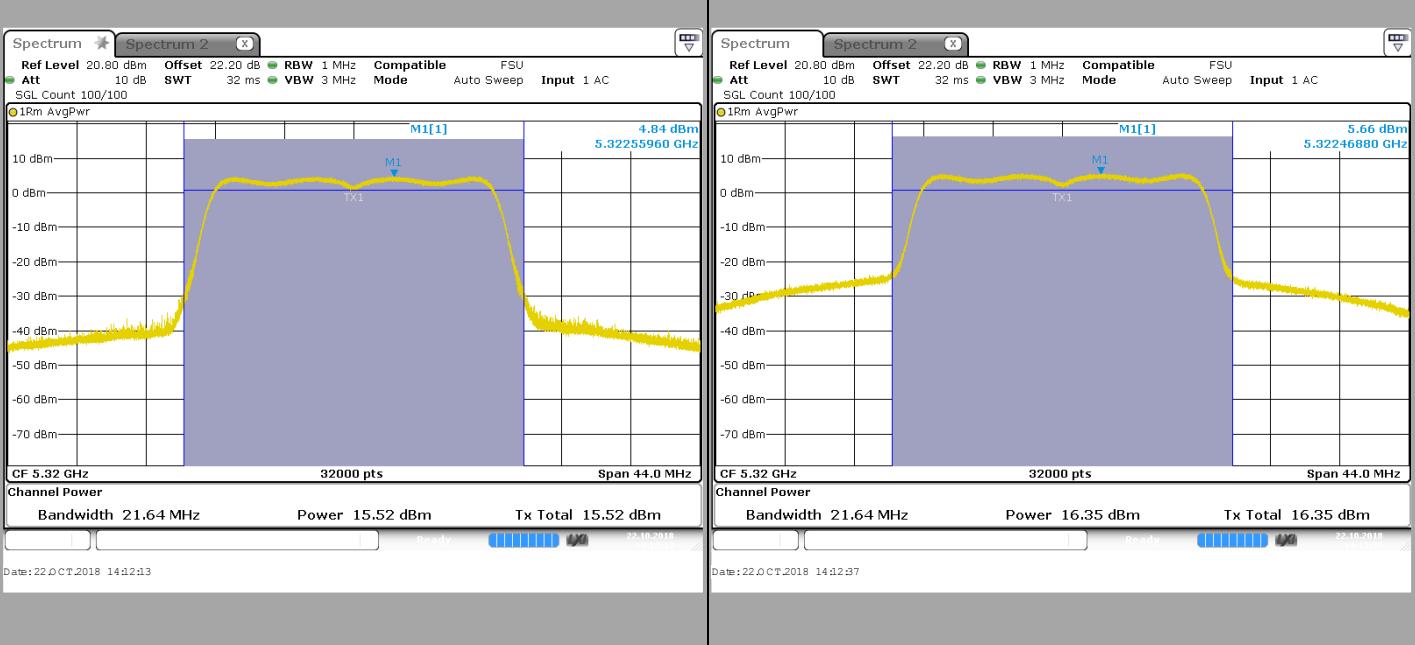


802.11n HT20/ac VHT20

C6

Tx1

Tx2



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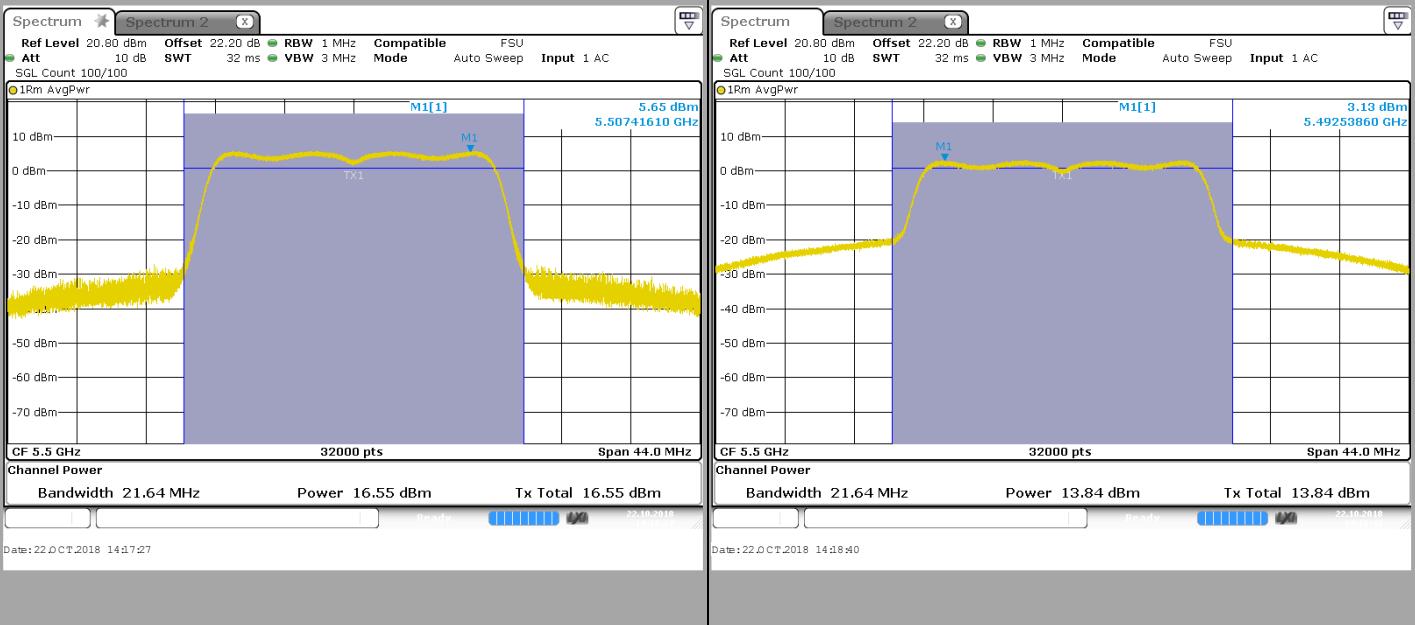
L C I E

802.11n HT20/ac VHT20

C7

Tx1

Tx2

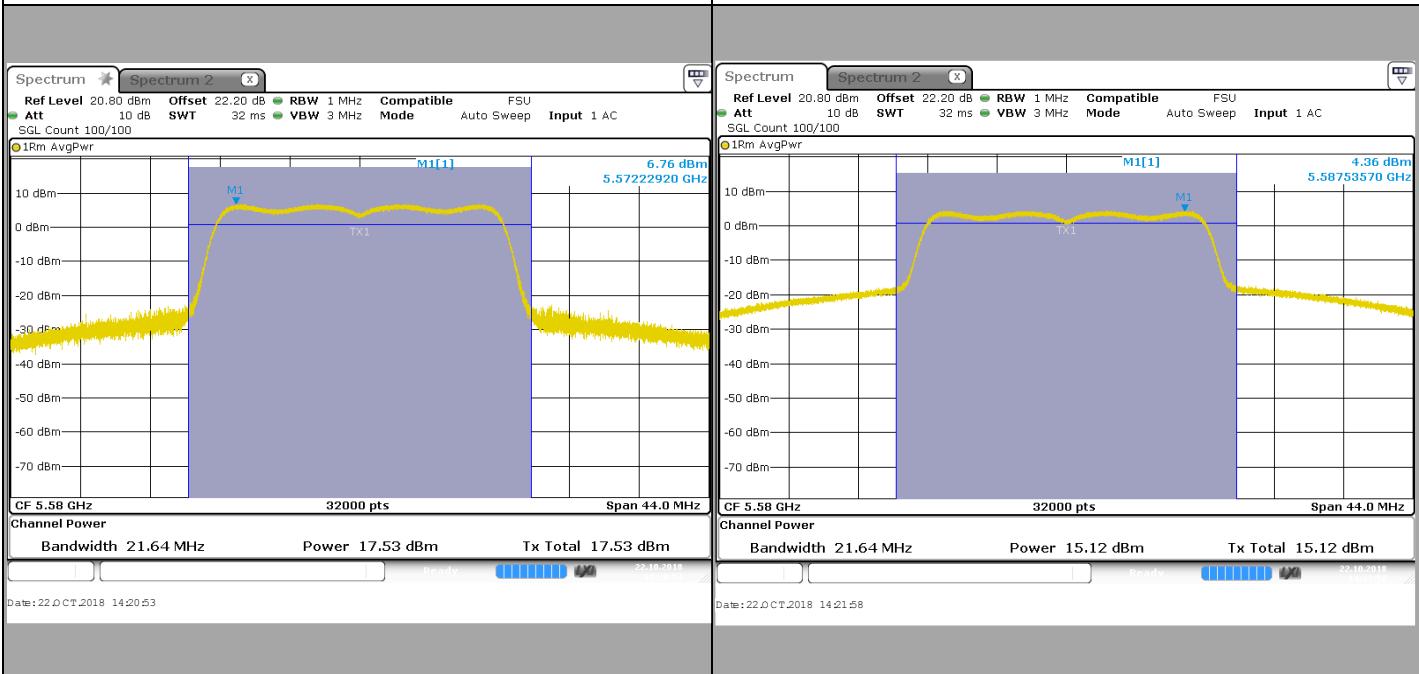


802.11n HT20/ac VHT20

C8

Tx1

Tx2



TEST REPORT

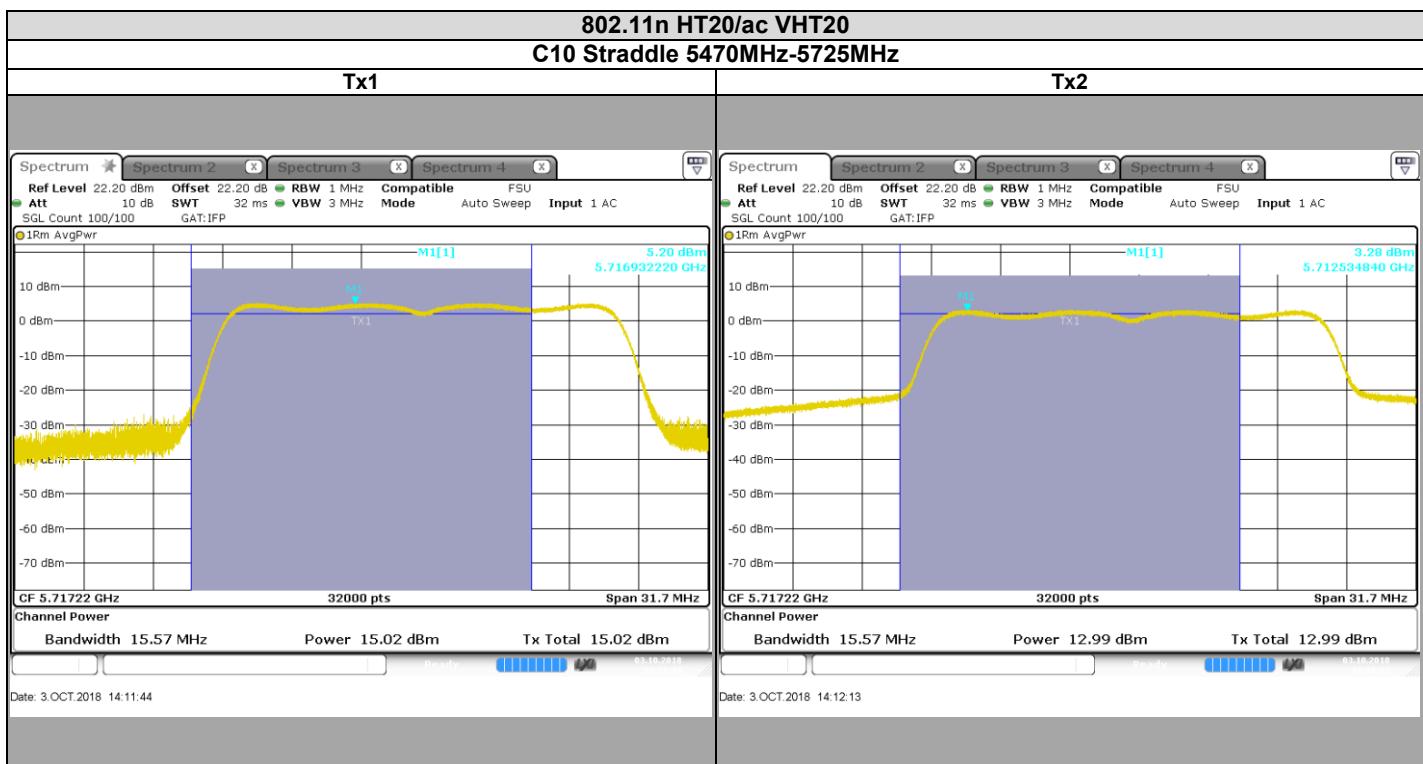
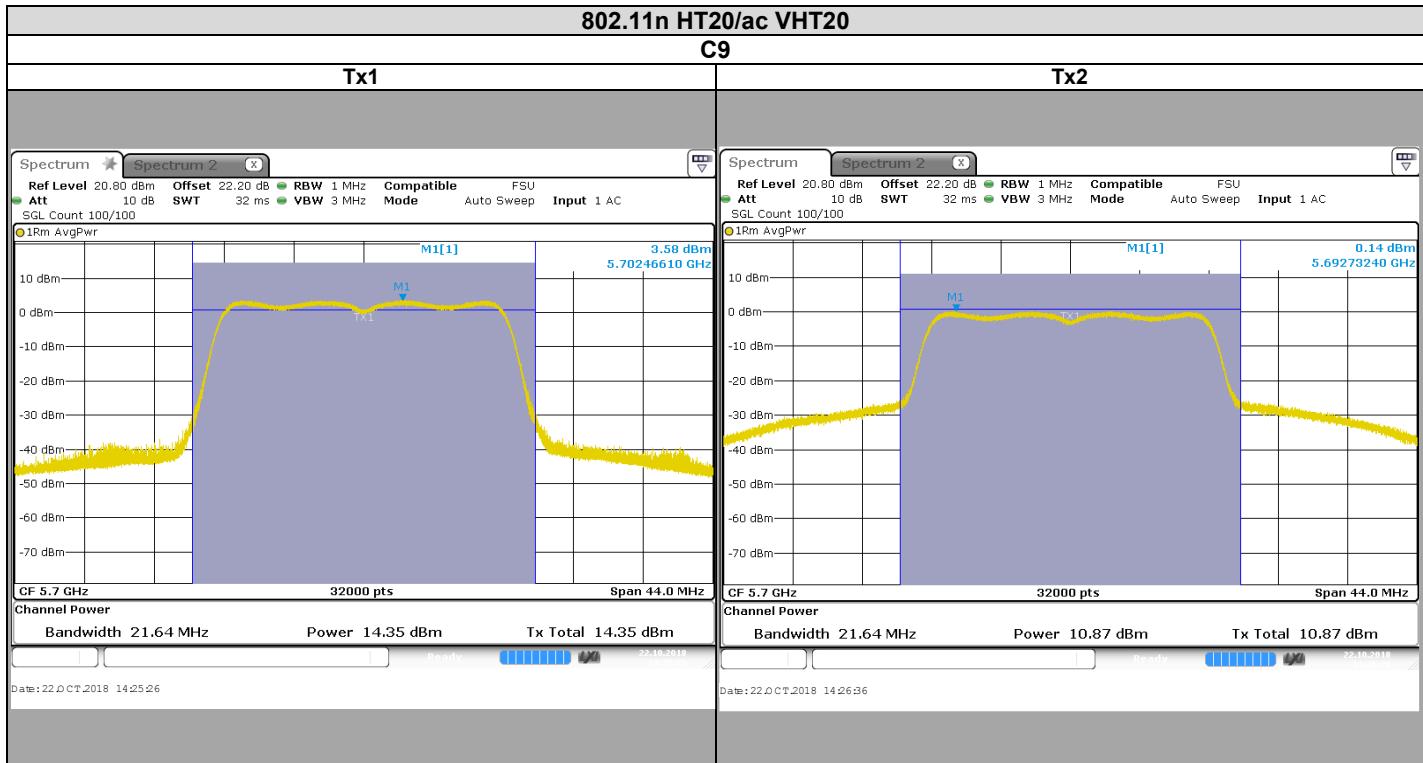
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L C I E

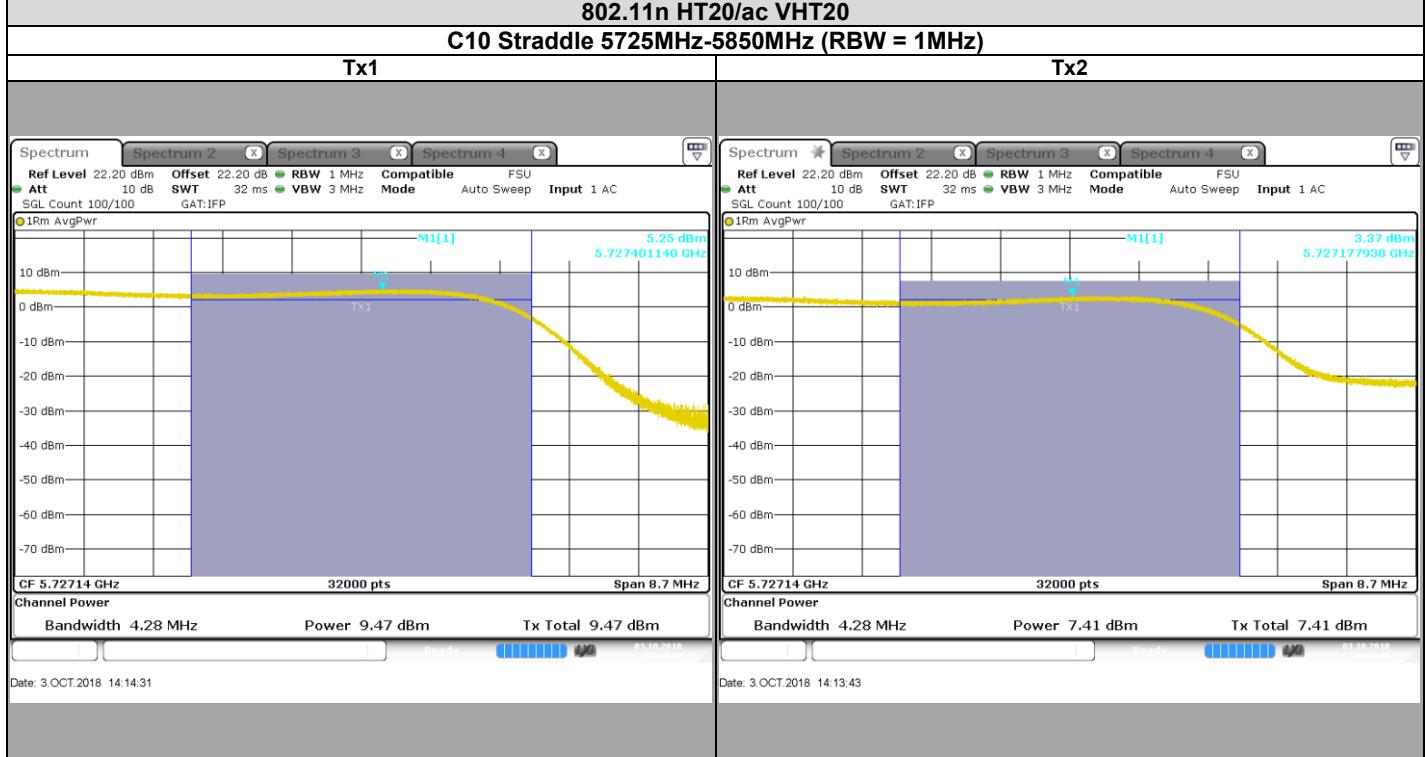




L C I E

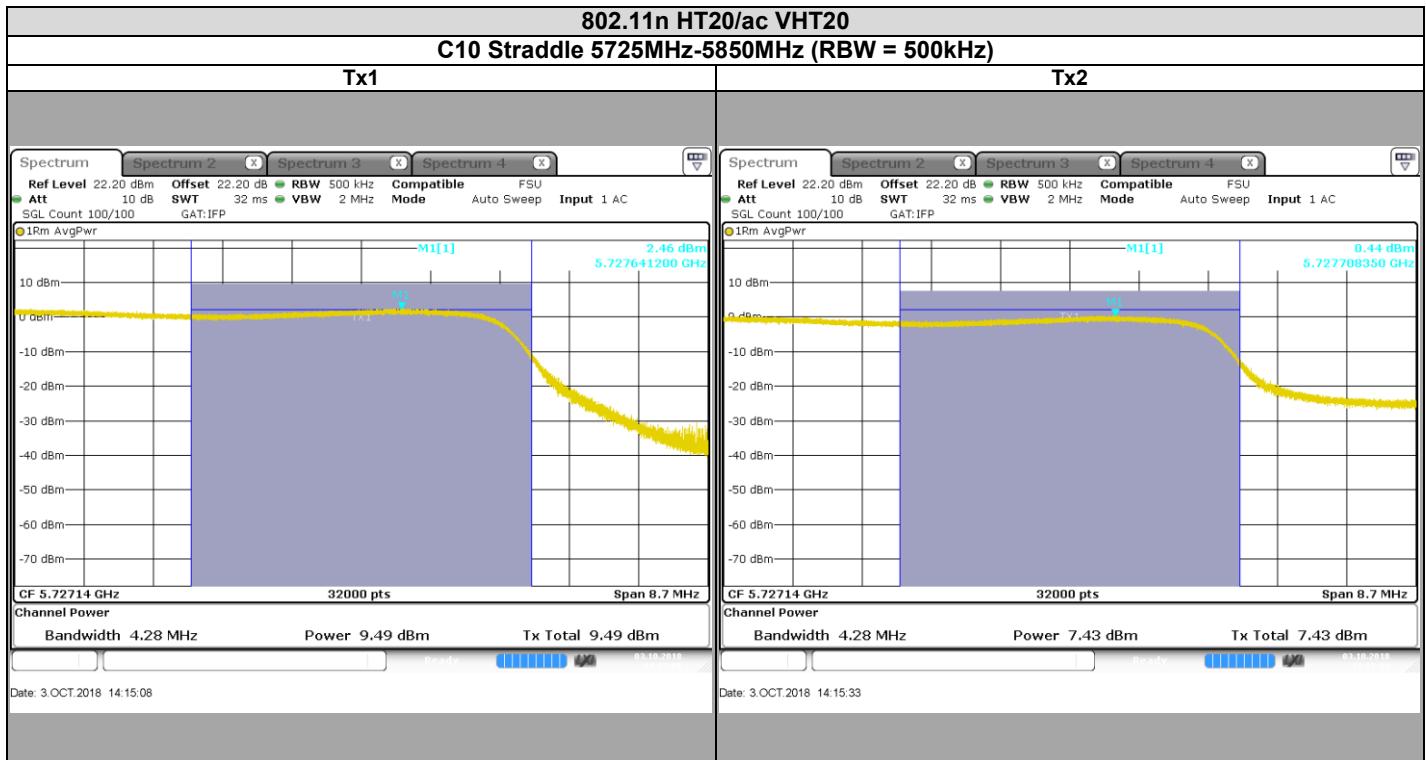
802.11n HT20/ac VHT20

C10 Straddle 5725MHz-5850MHz (RBW = 1MHz)



802.11n HT20/ac VHT20

C10 Straddle 5725MHz-5850MHz (RBW = 500kHz)



TEST REPORT

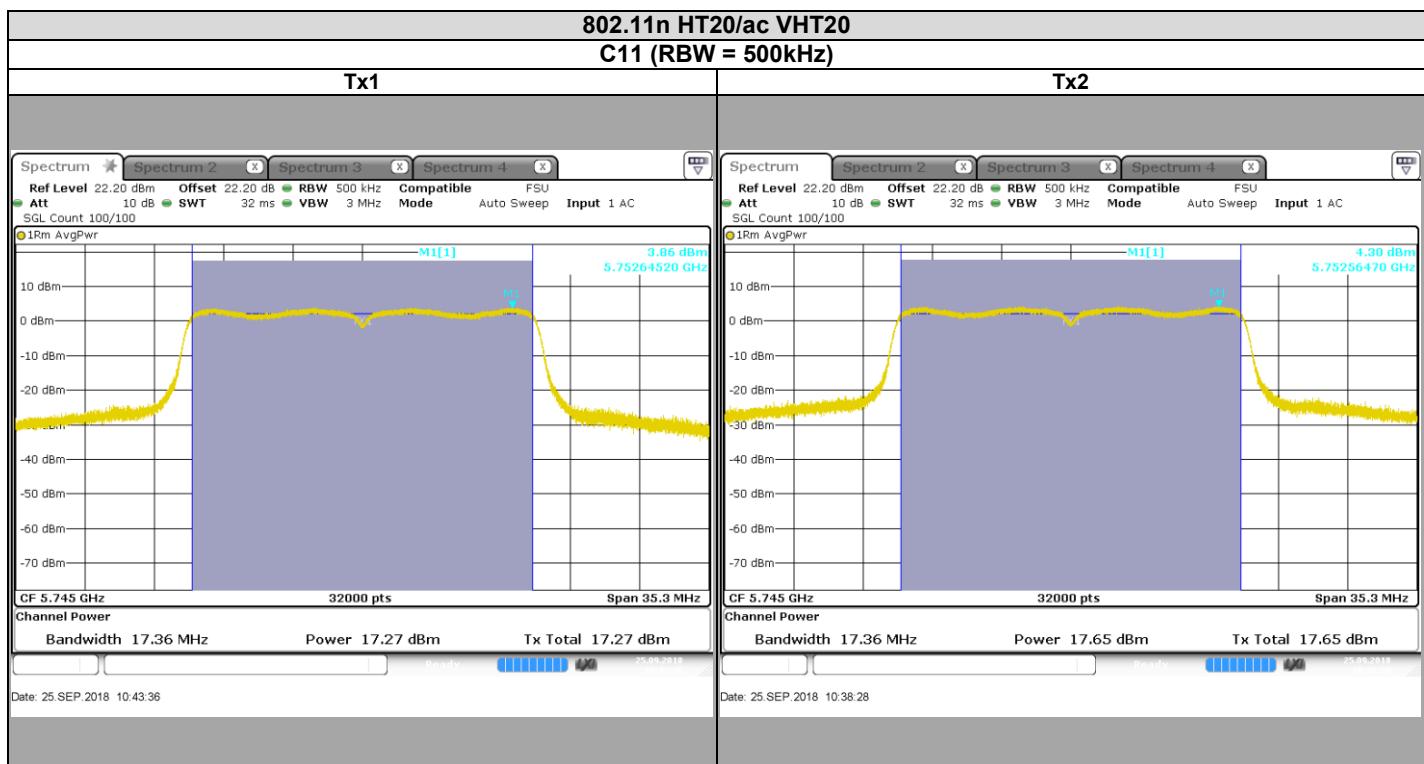
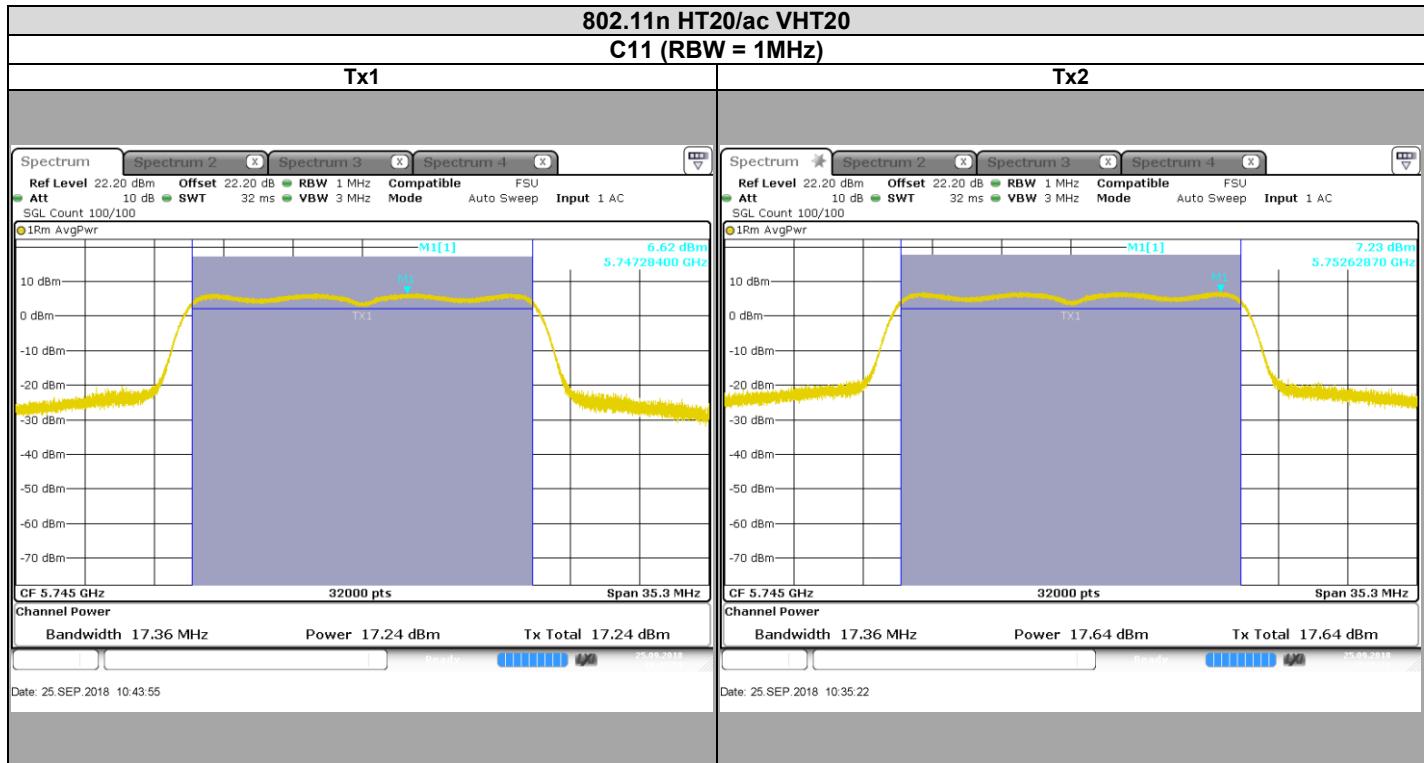
N° 157205-726501-D

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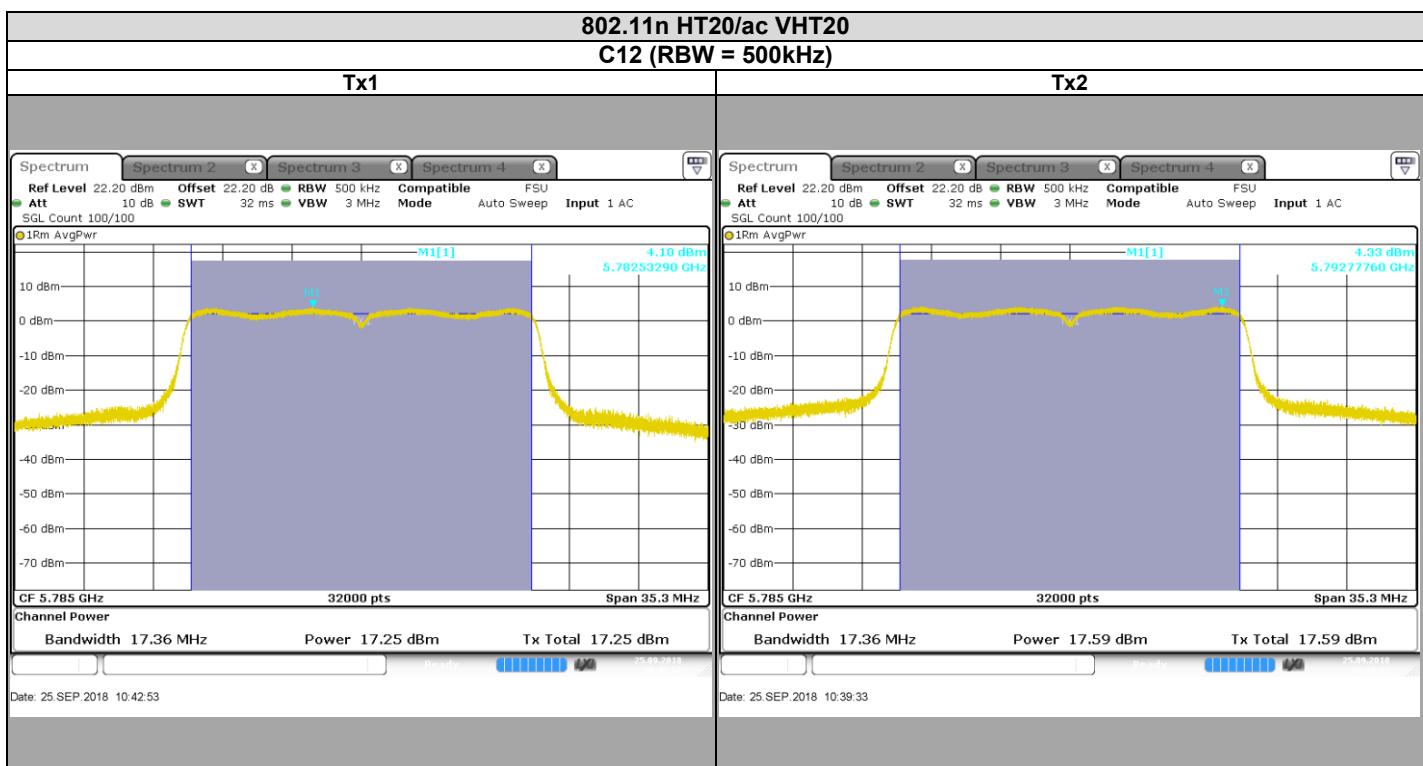
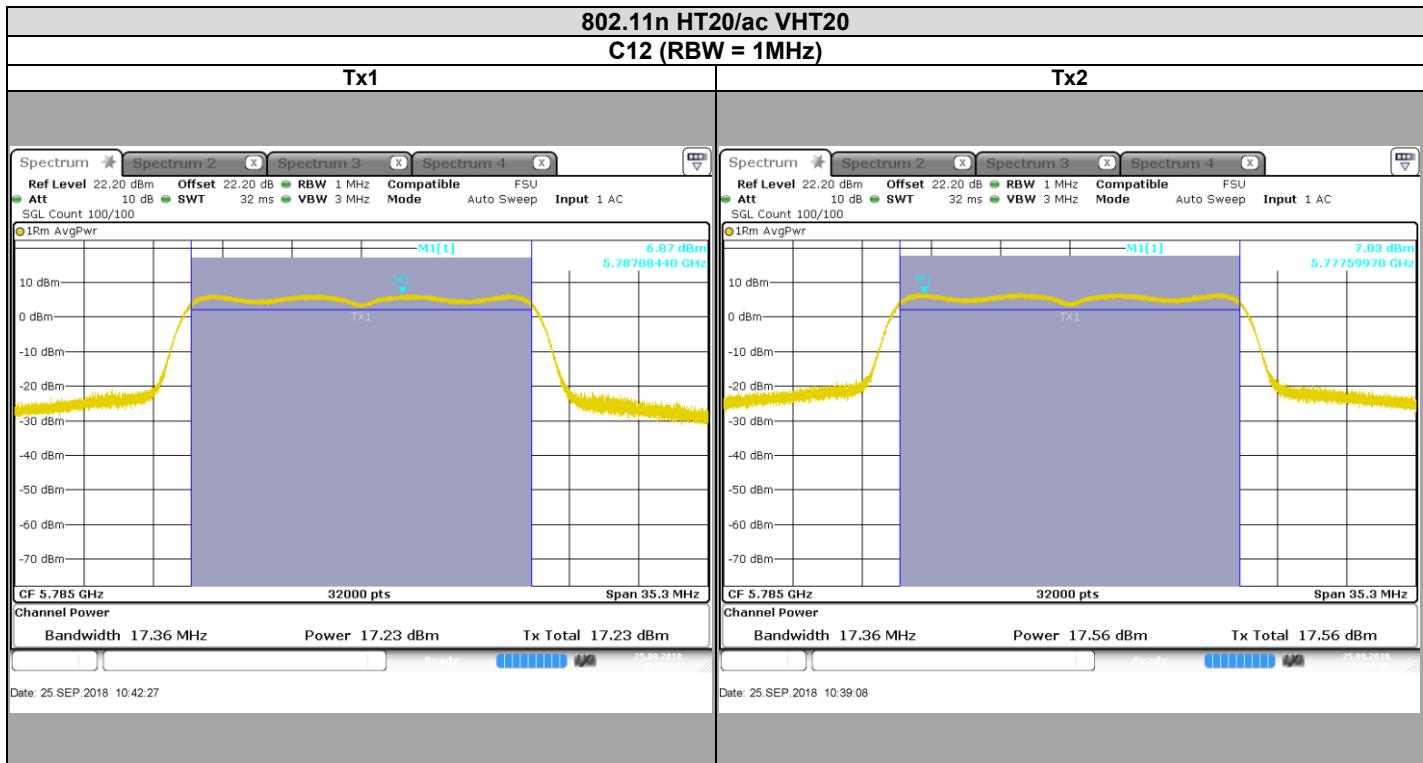


L C I E



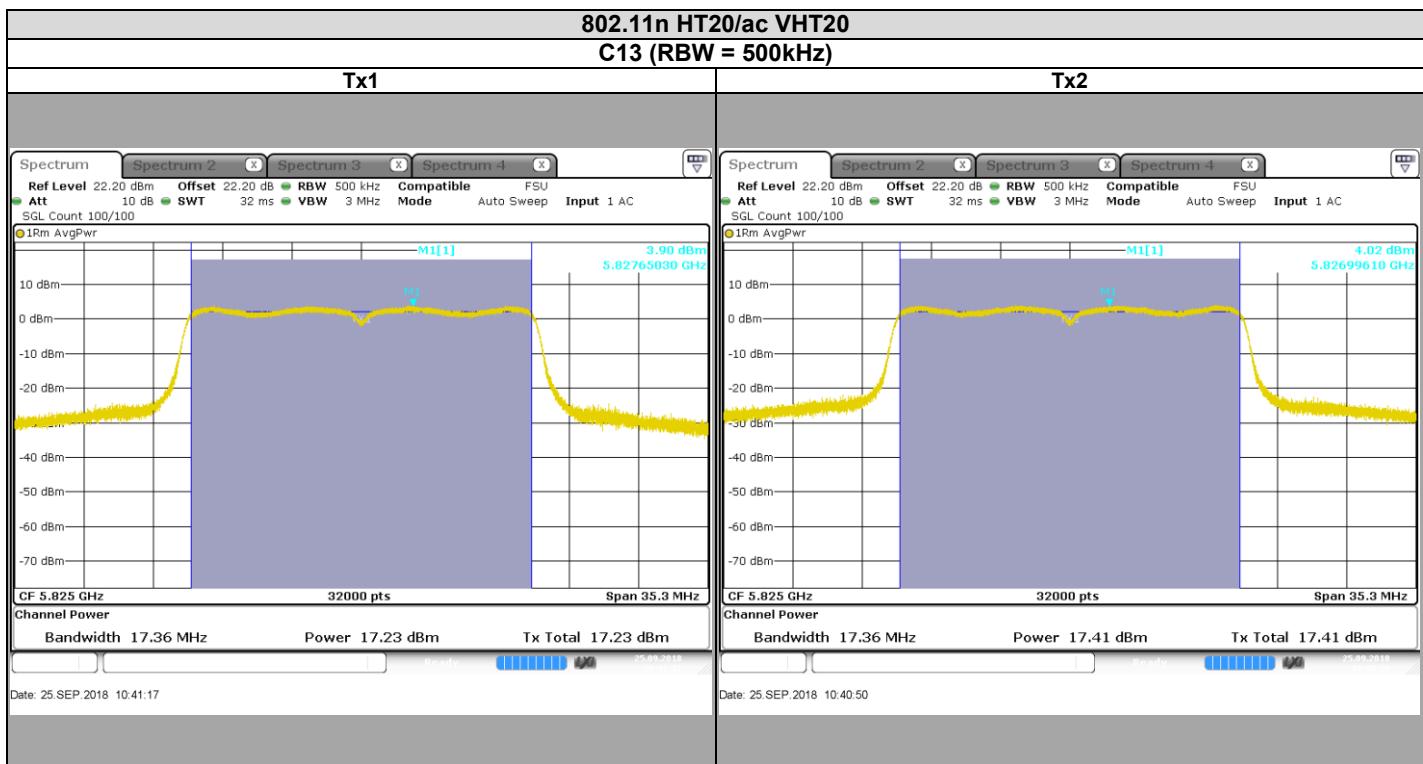
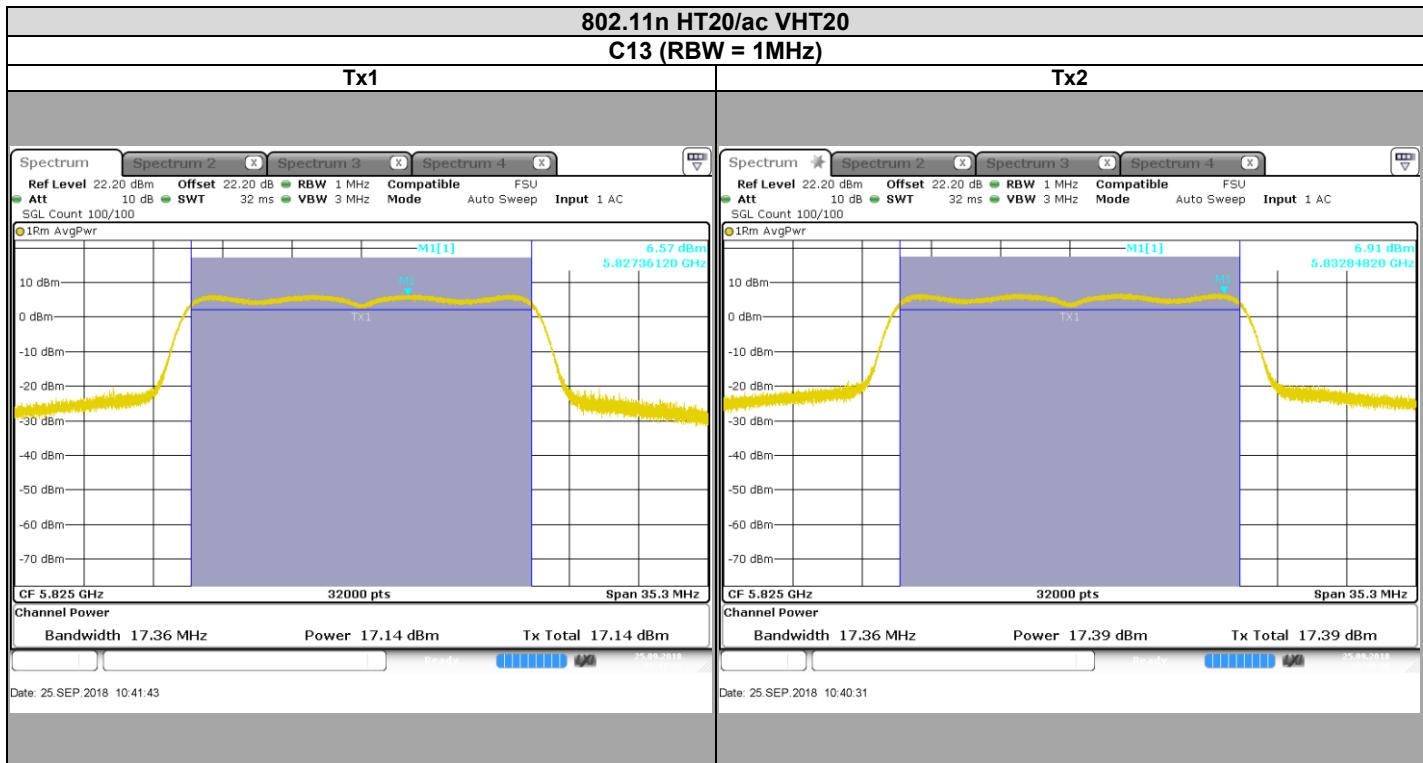


L C I E



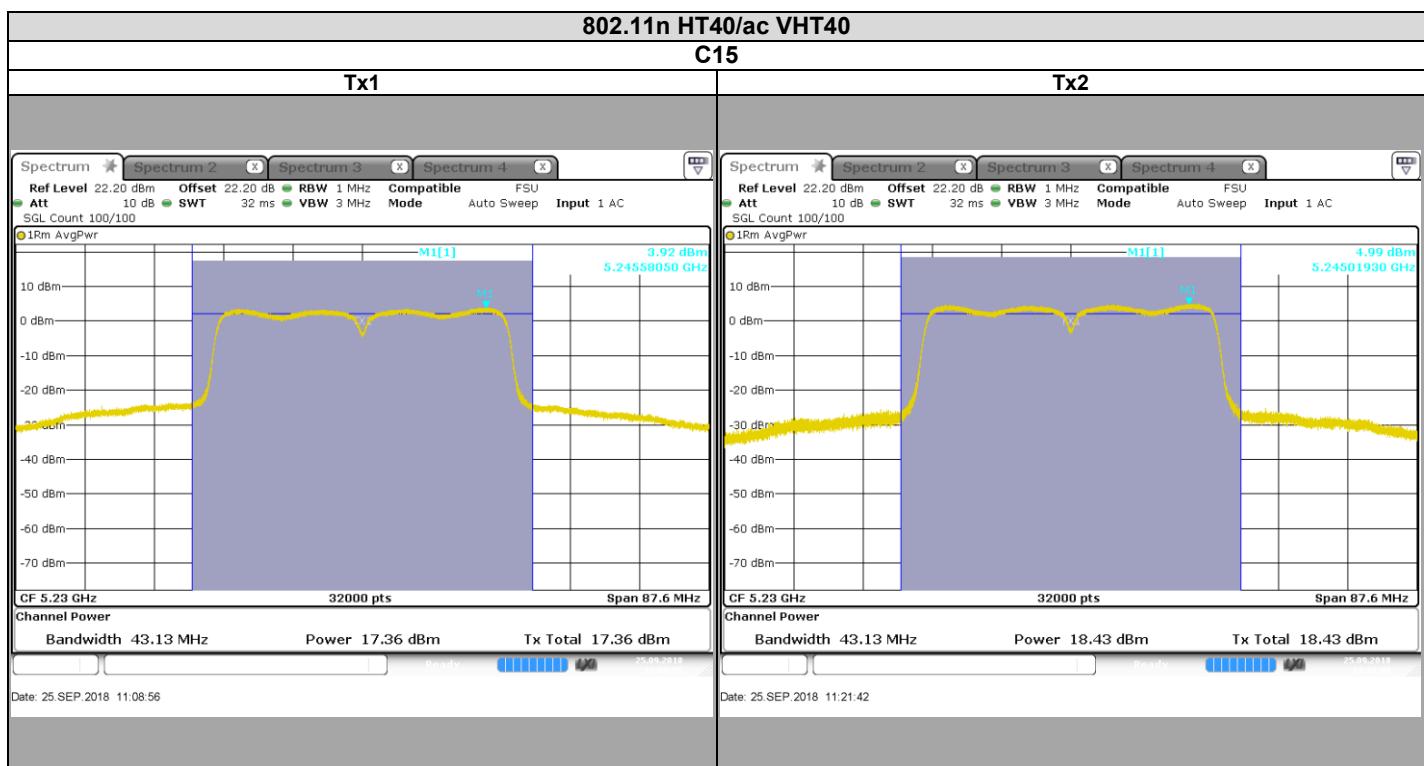
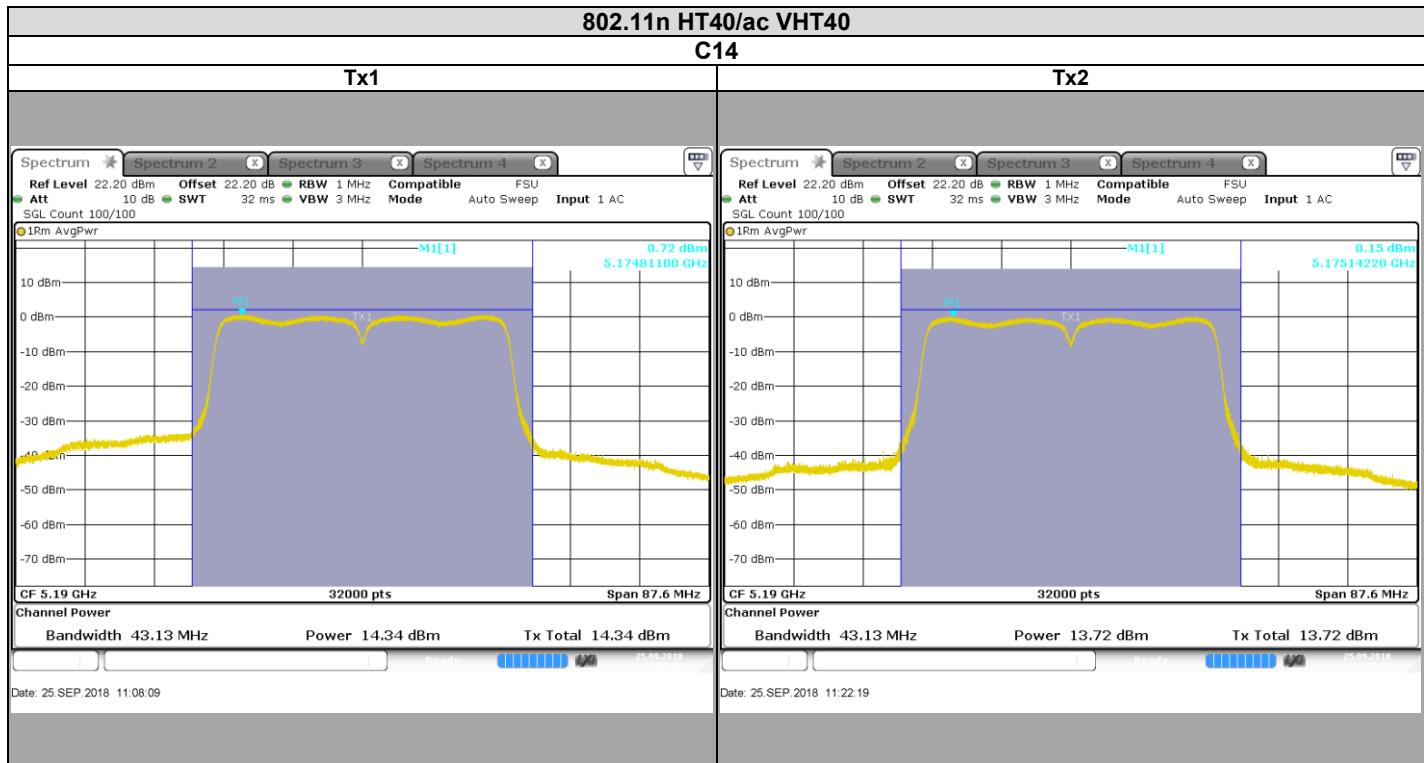


L C I E





L C I E



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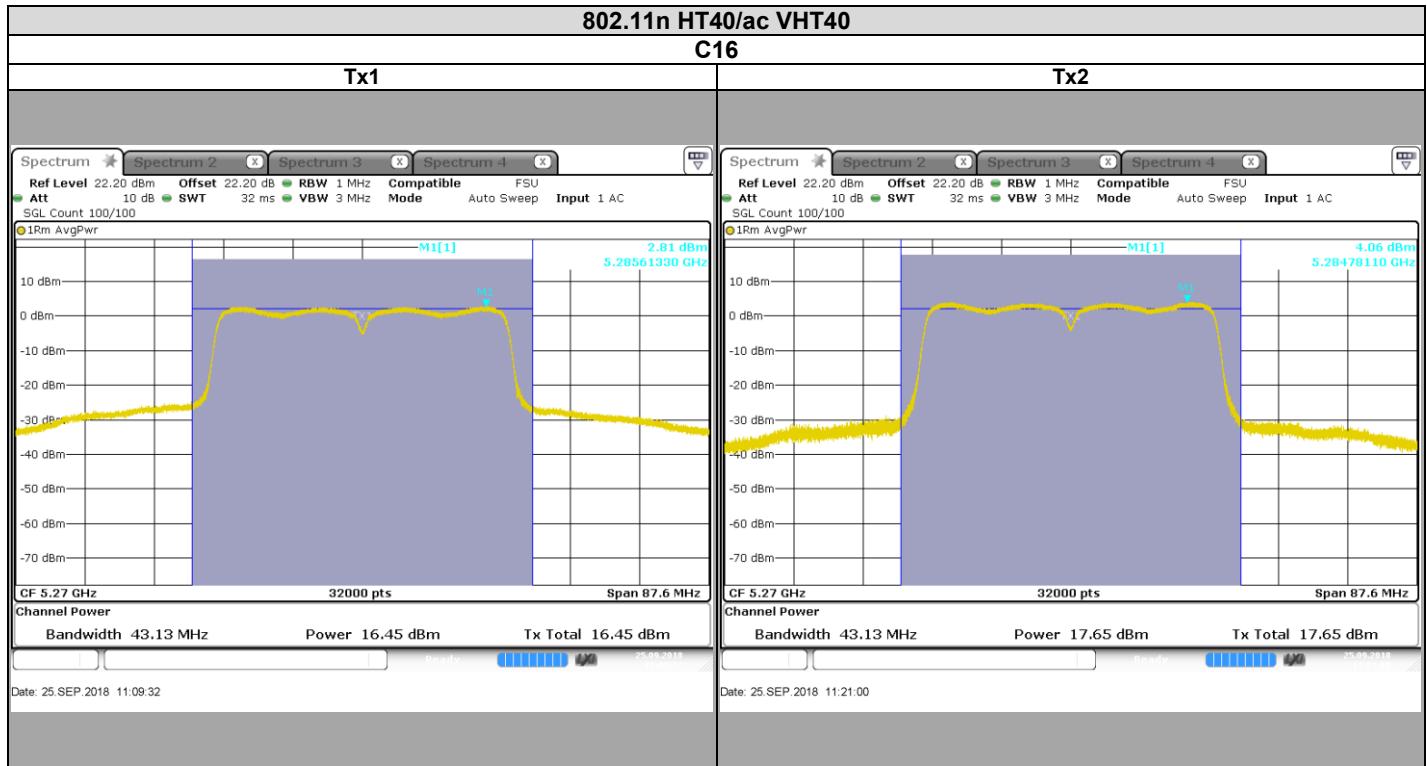
L C I E

802.11n HT40/ac VHT40

C16

Tx1

Tx2

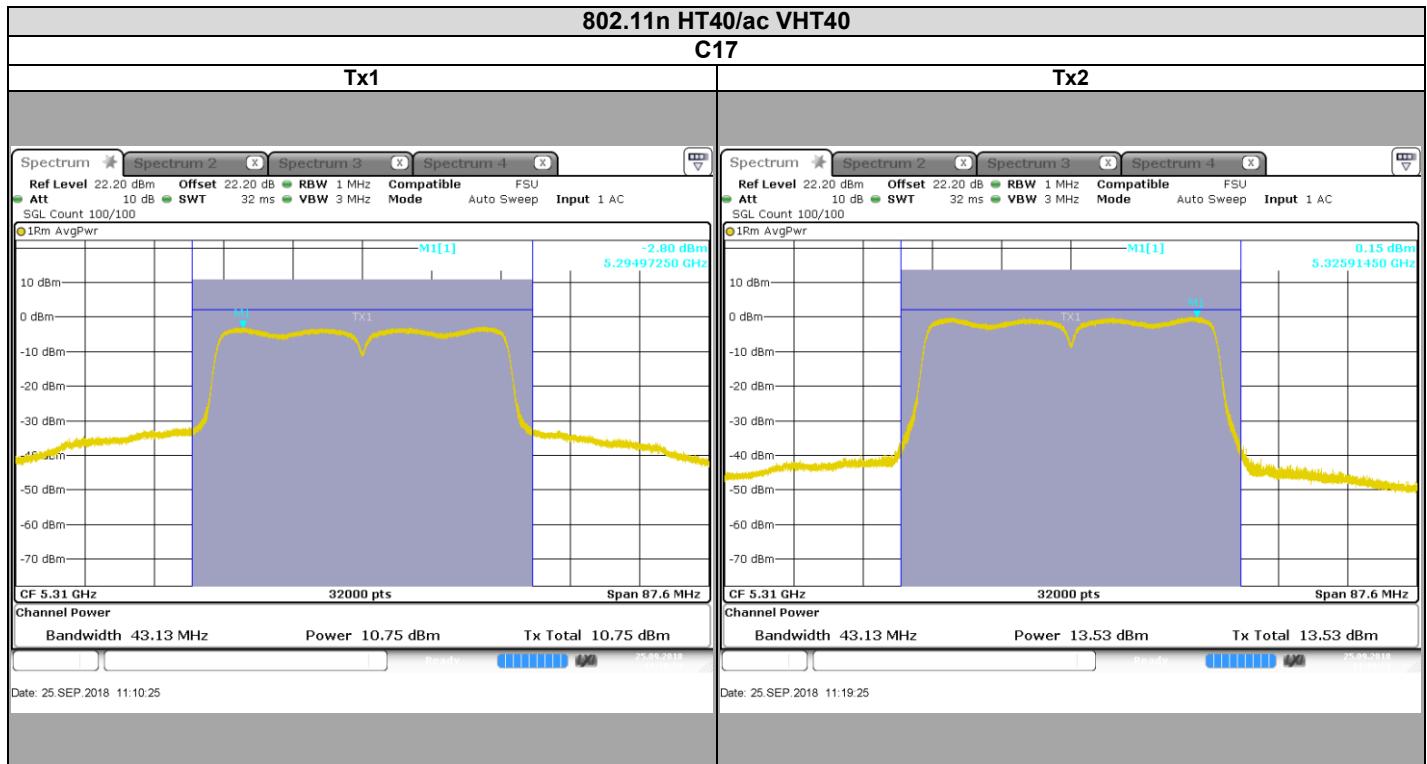


802.11n HT40/ac VHT40

C17

Tx1

Tx2



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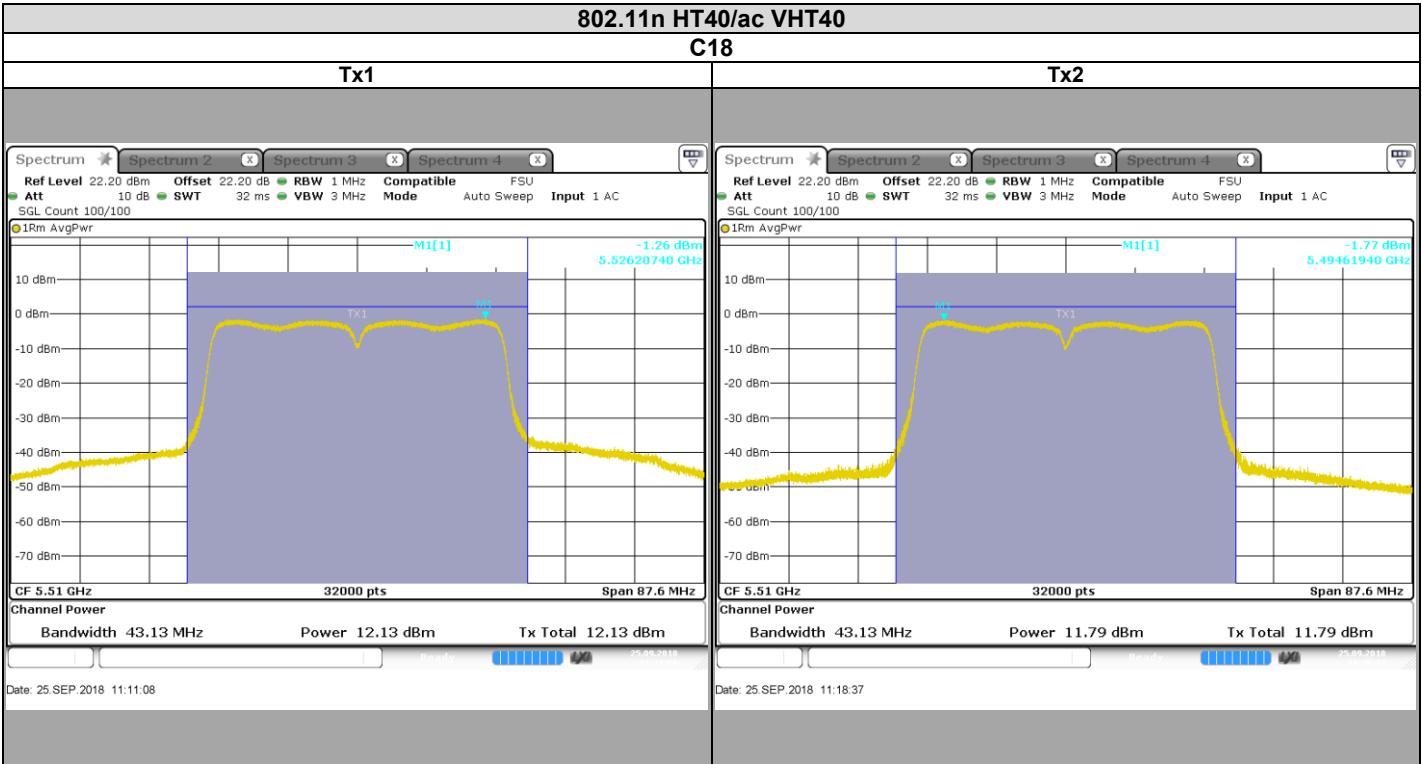
L C I E

802.11n HT40/ac VHT40

C18

Tx1

Tx2

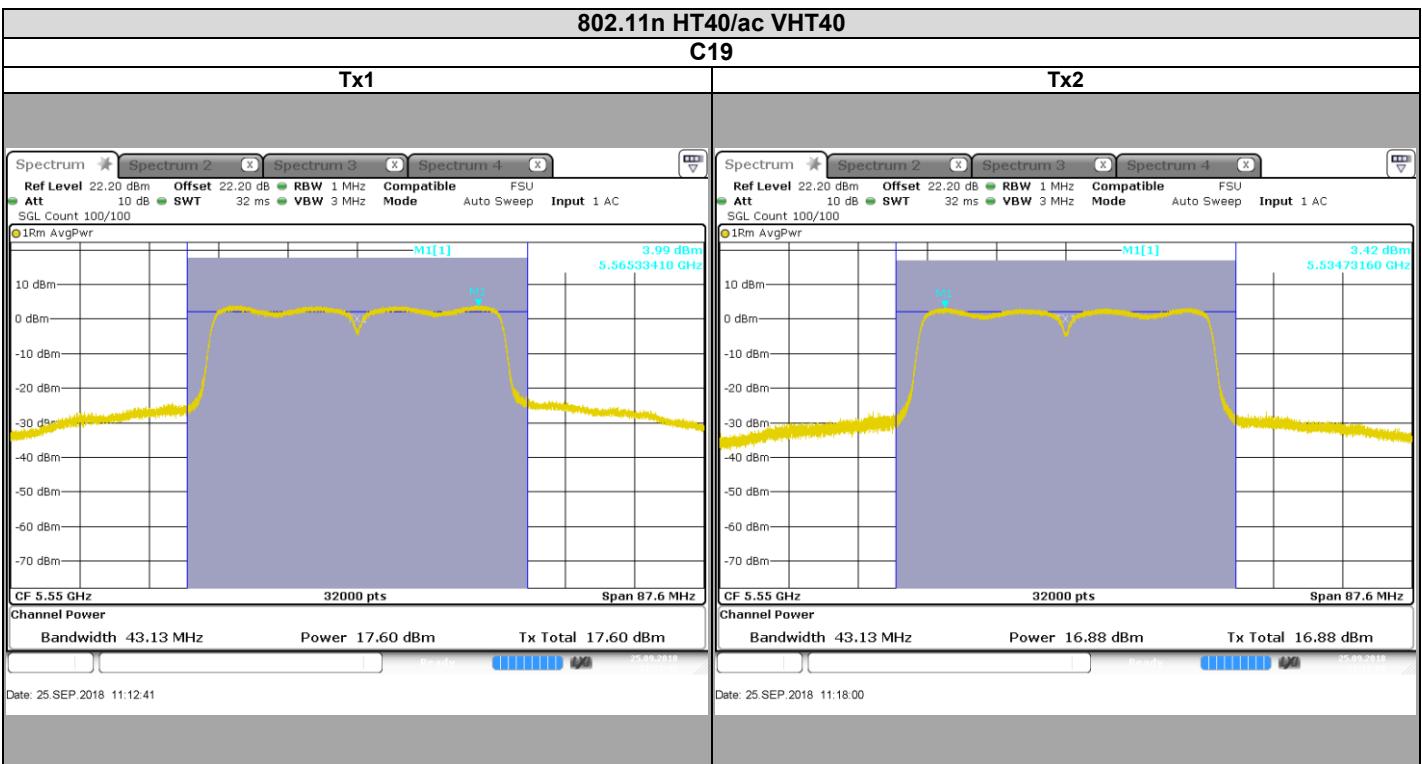


802.11n HT40/ac VHT40

C19

Tx1

Tx2



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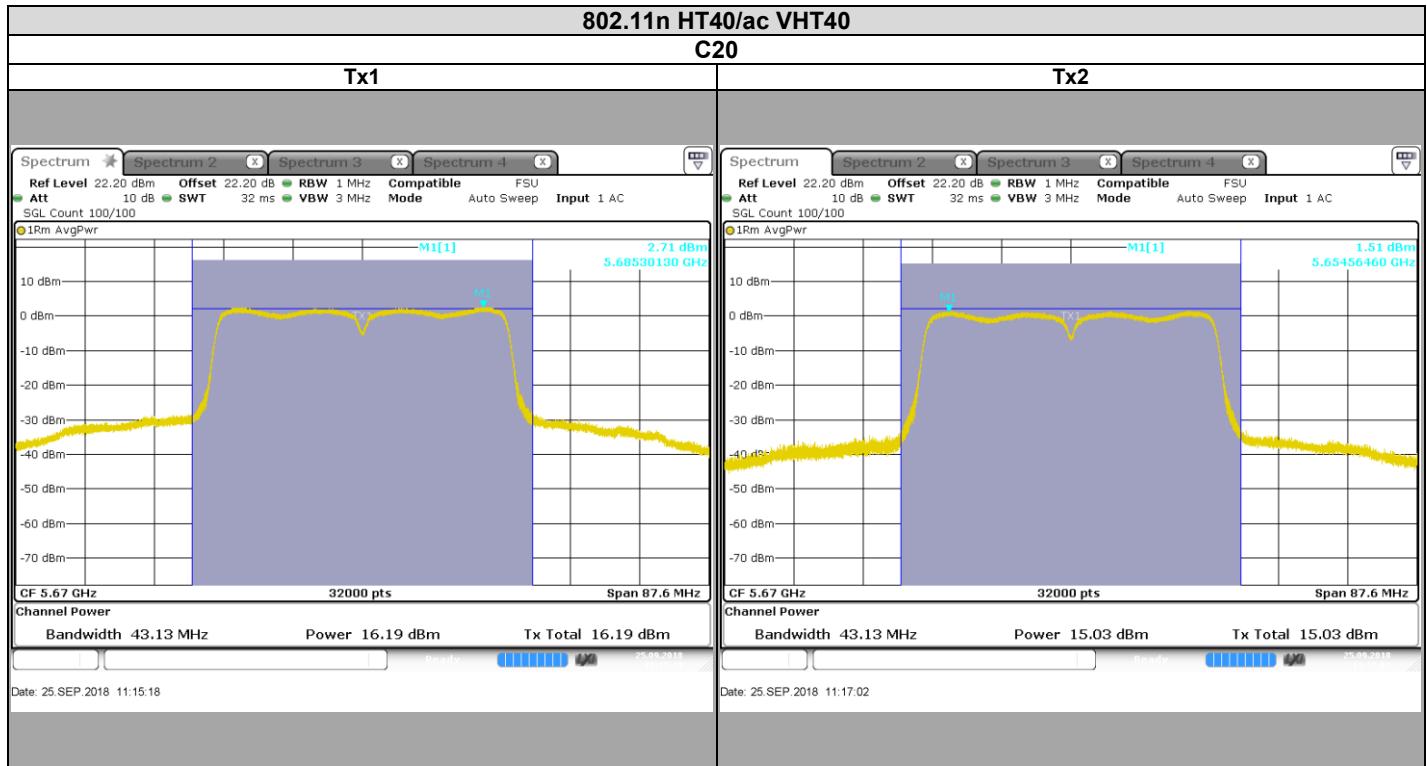
L C I E

802.11n HT40/ac VHT40

C20

Tx1

Tx2

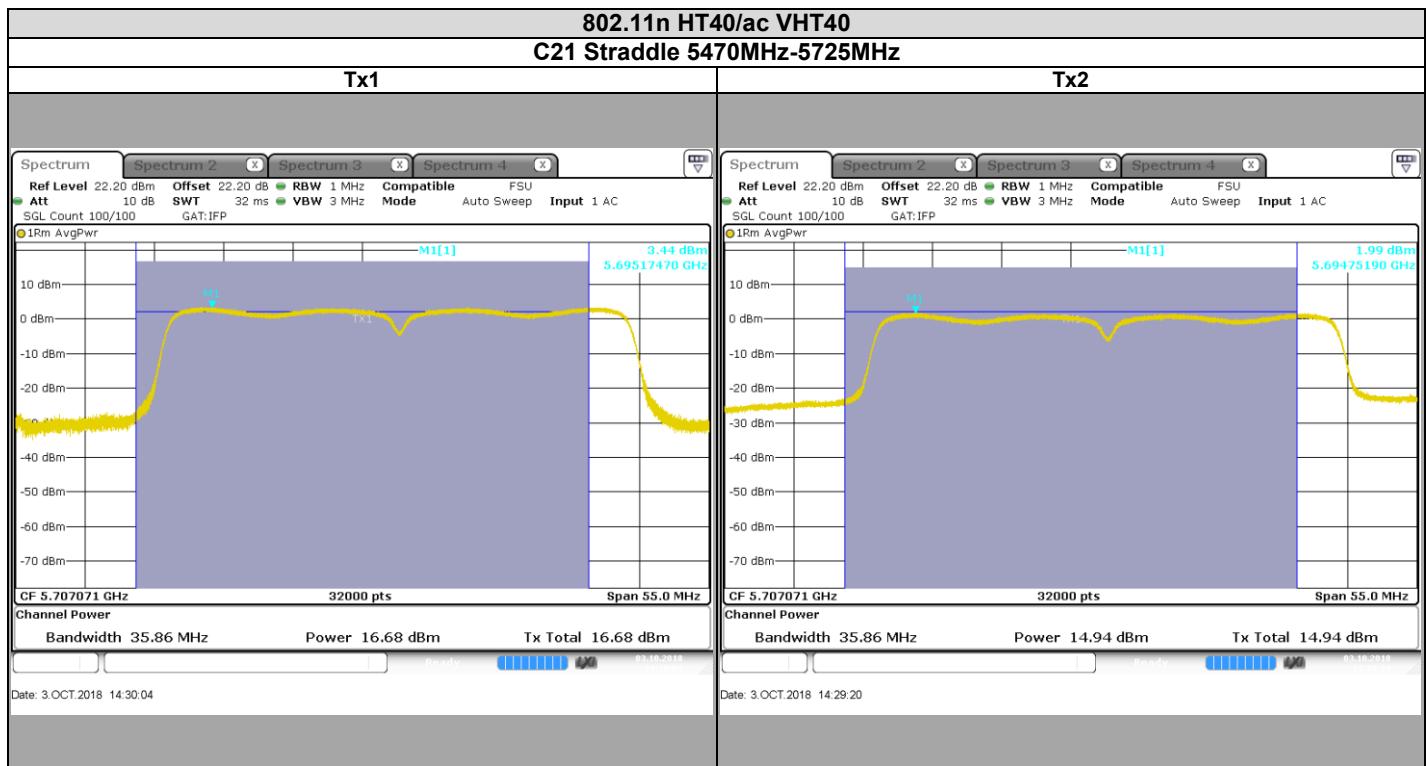


802.11n HT40/ac VHT40

C21 Straddle 5470MHz-5725MHz

Tx1

Tx2



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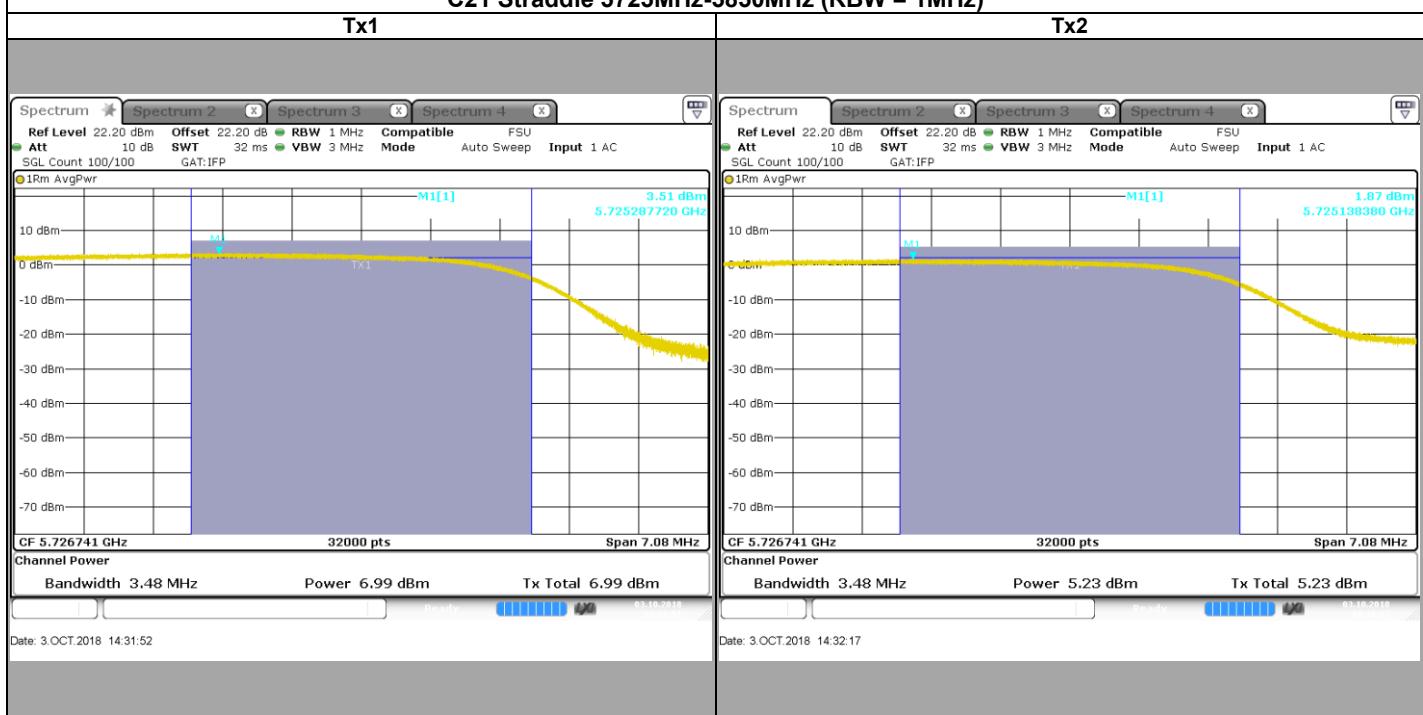
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L C I E

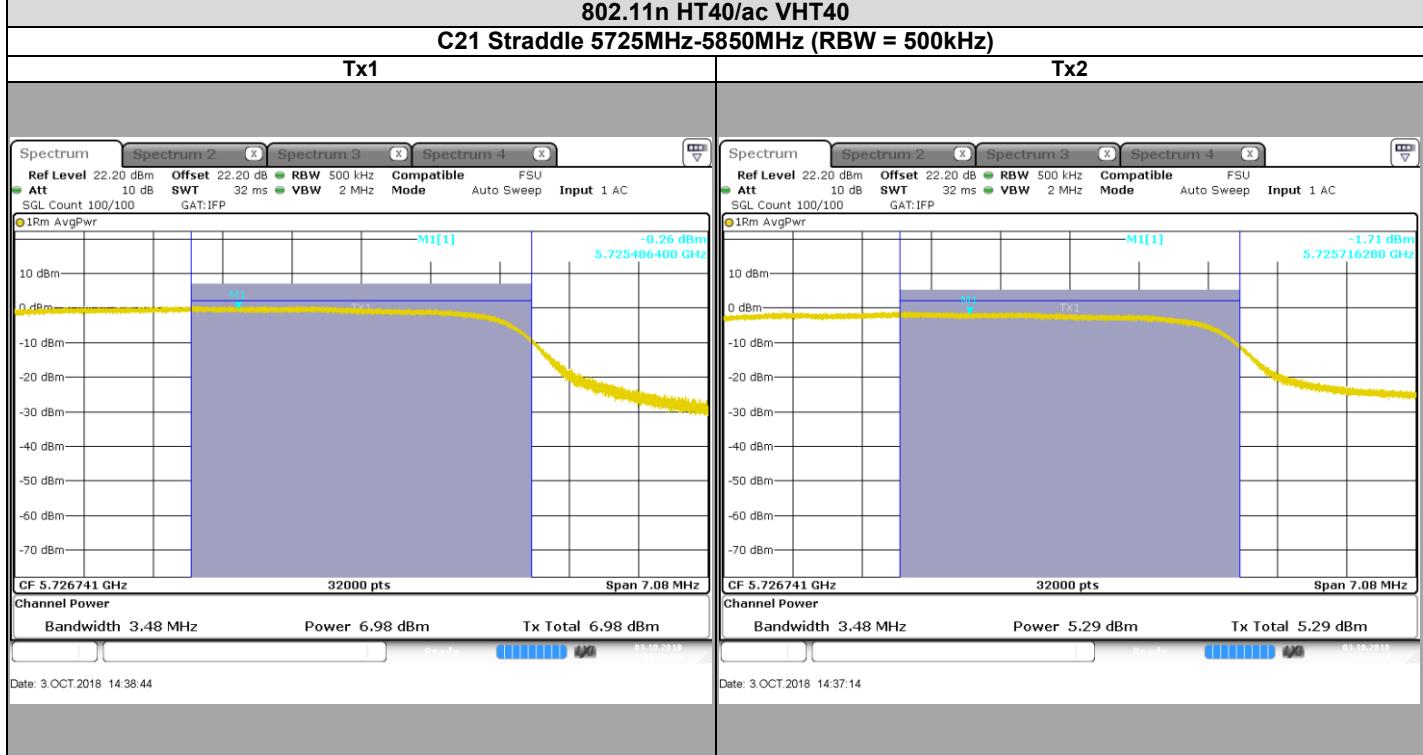
802.11n HT40/ac VHT40

C21 Straddle 5725MHz-5850MHz (RBW = 1MHz)



802.11n HT40/ac VHT40

C21 Straddle 5725MHz-5850MHz (RBW = 500kHz)



TEST REPORT

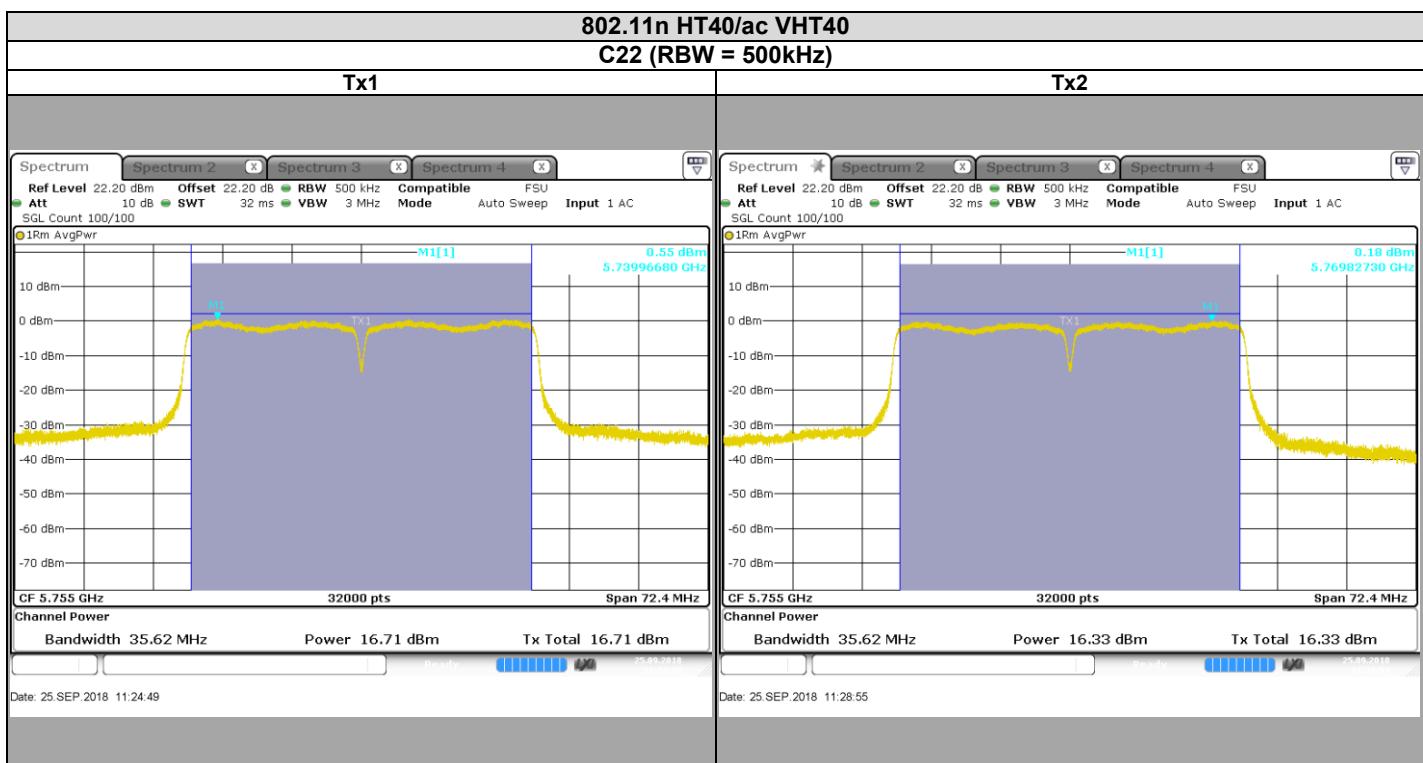
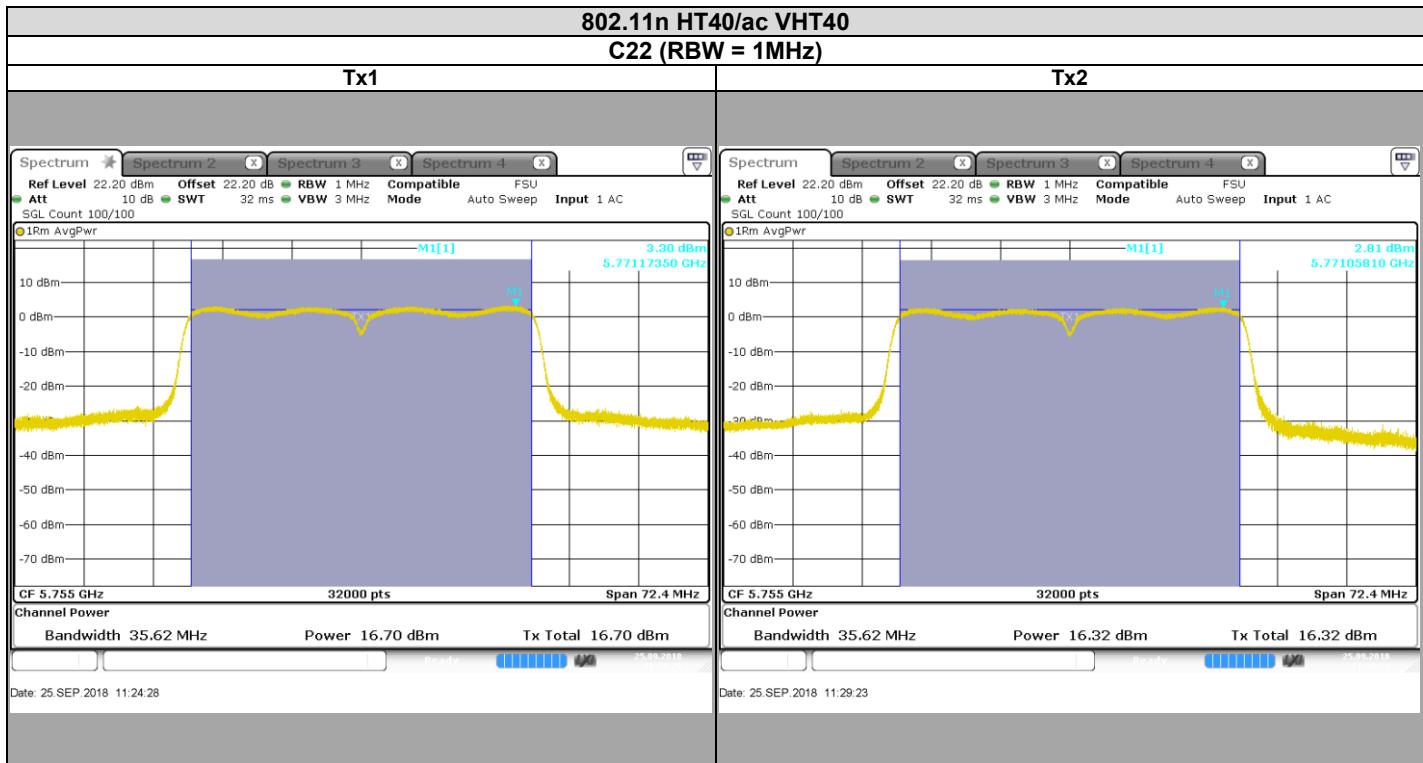
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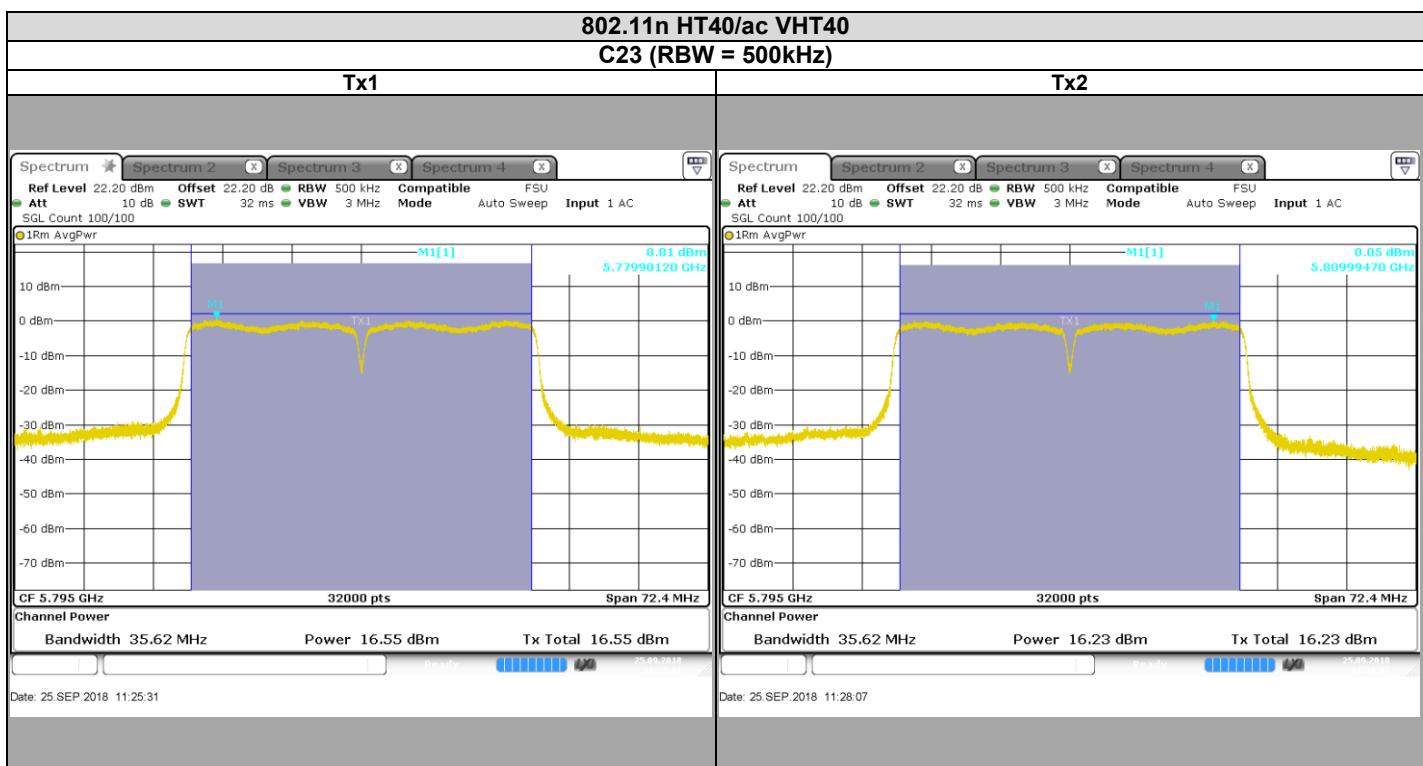
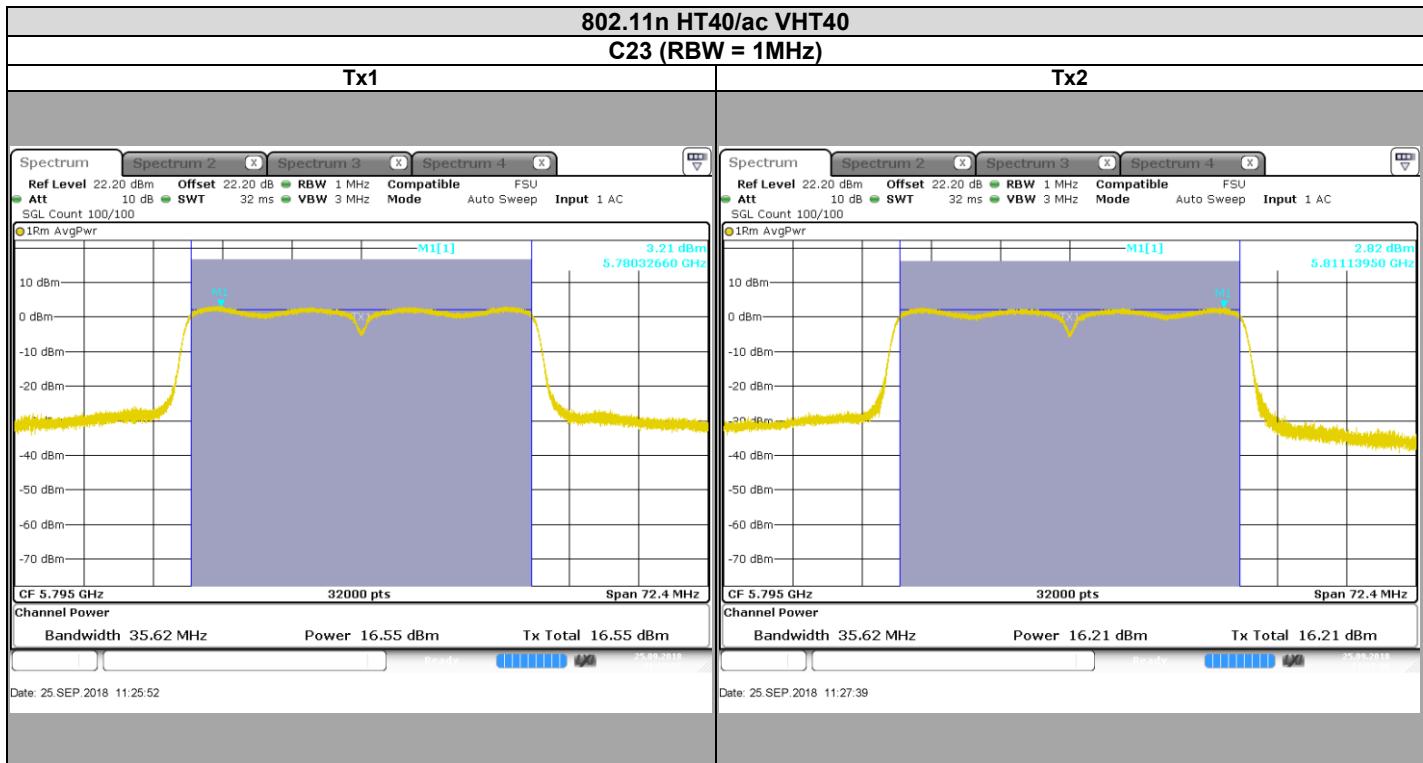


L C I E





L C I E





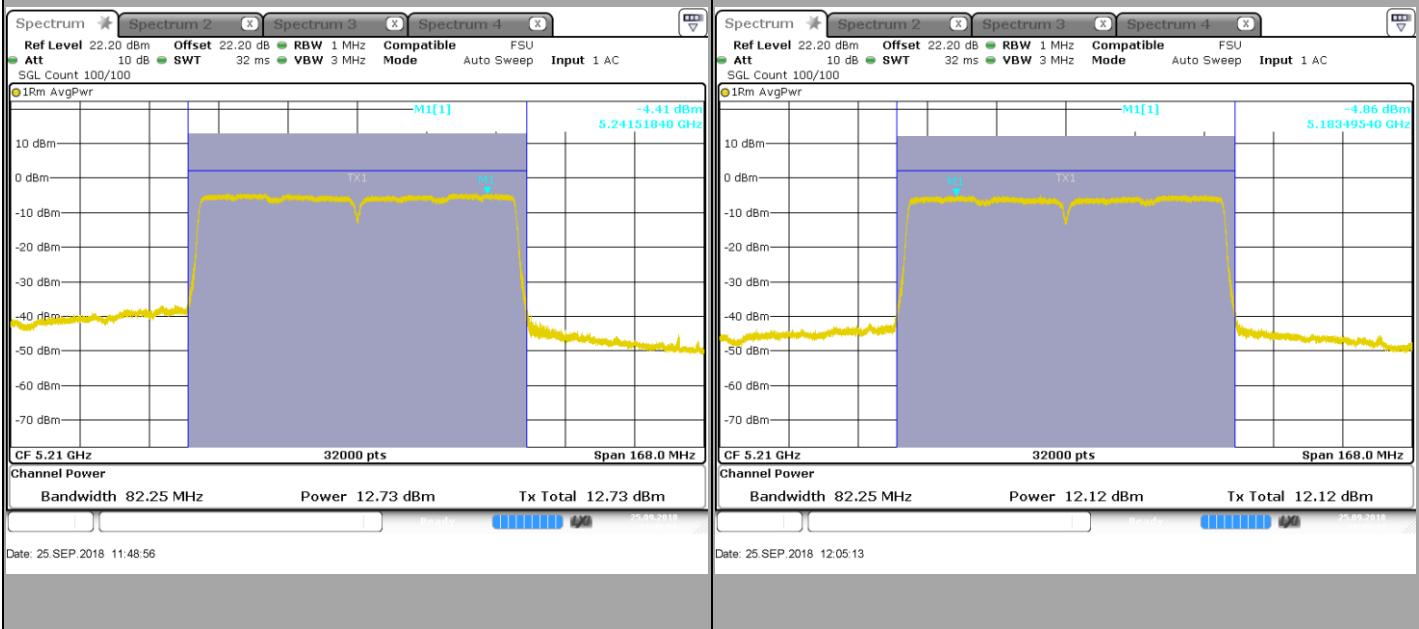
L C I E

802.11ac VHT80

C24

Tx1

Tx2

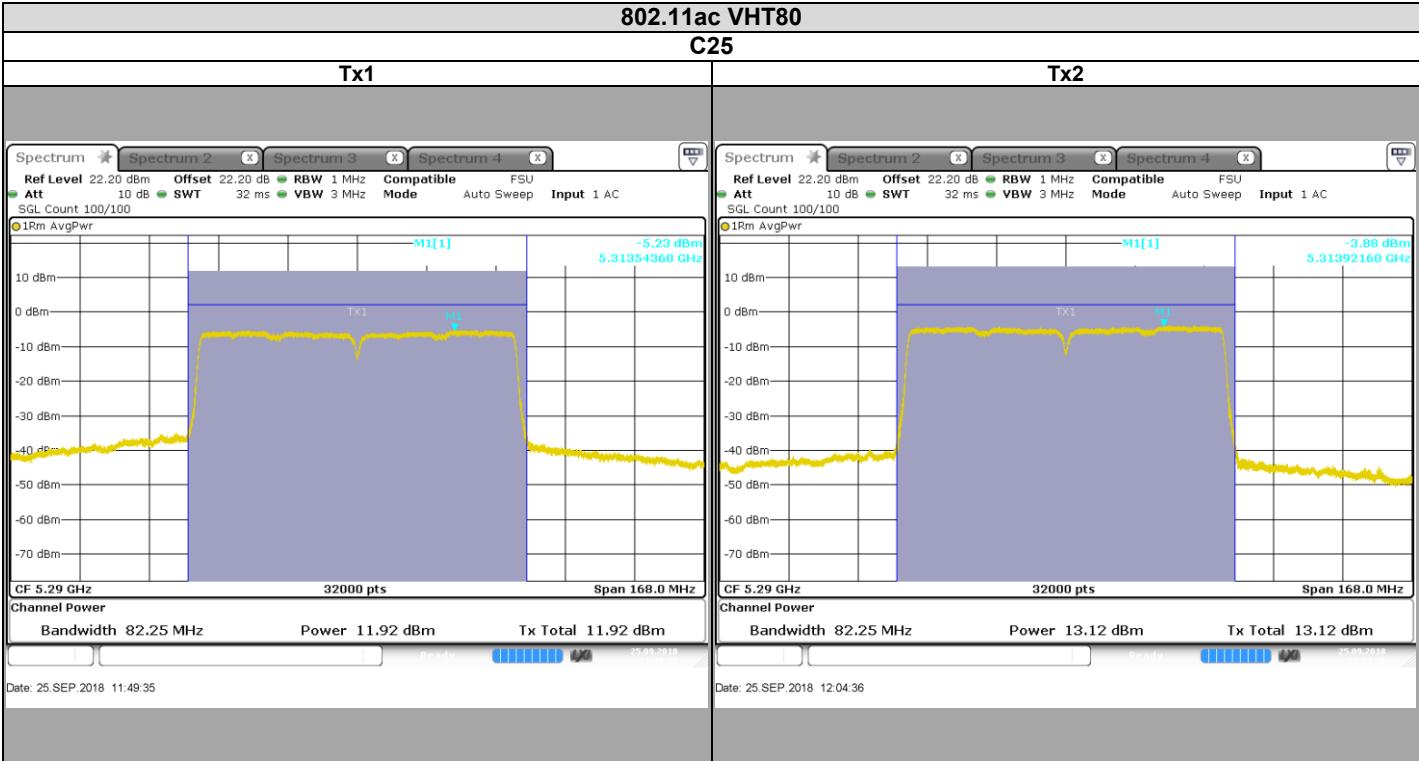


802.11ac VHT80

C25

Tx1

Tx2



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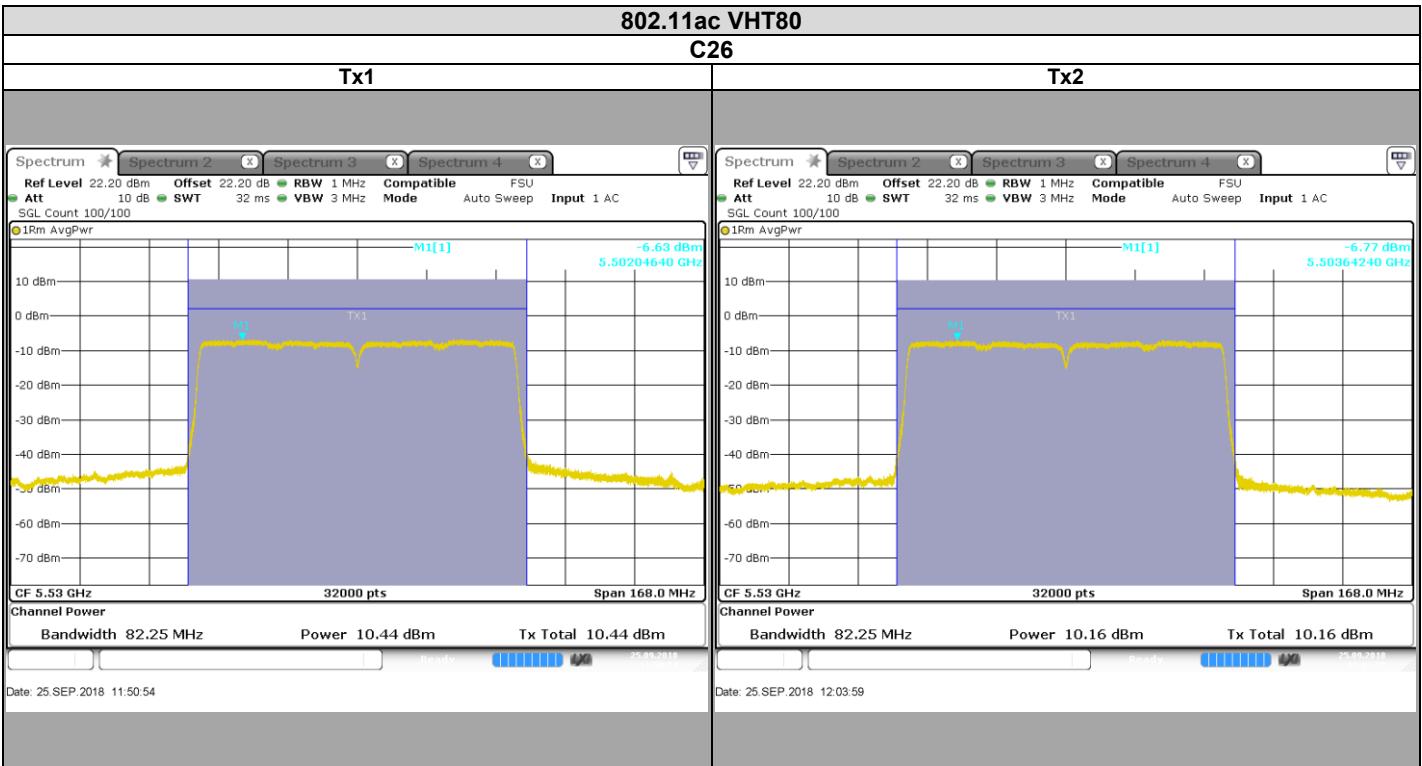
L C I E

802.11ac VHT80

C26

Tx1

Tx2

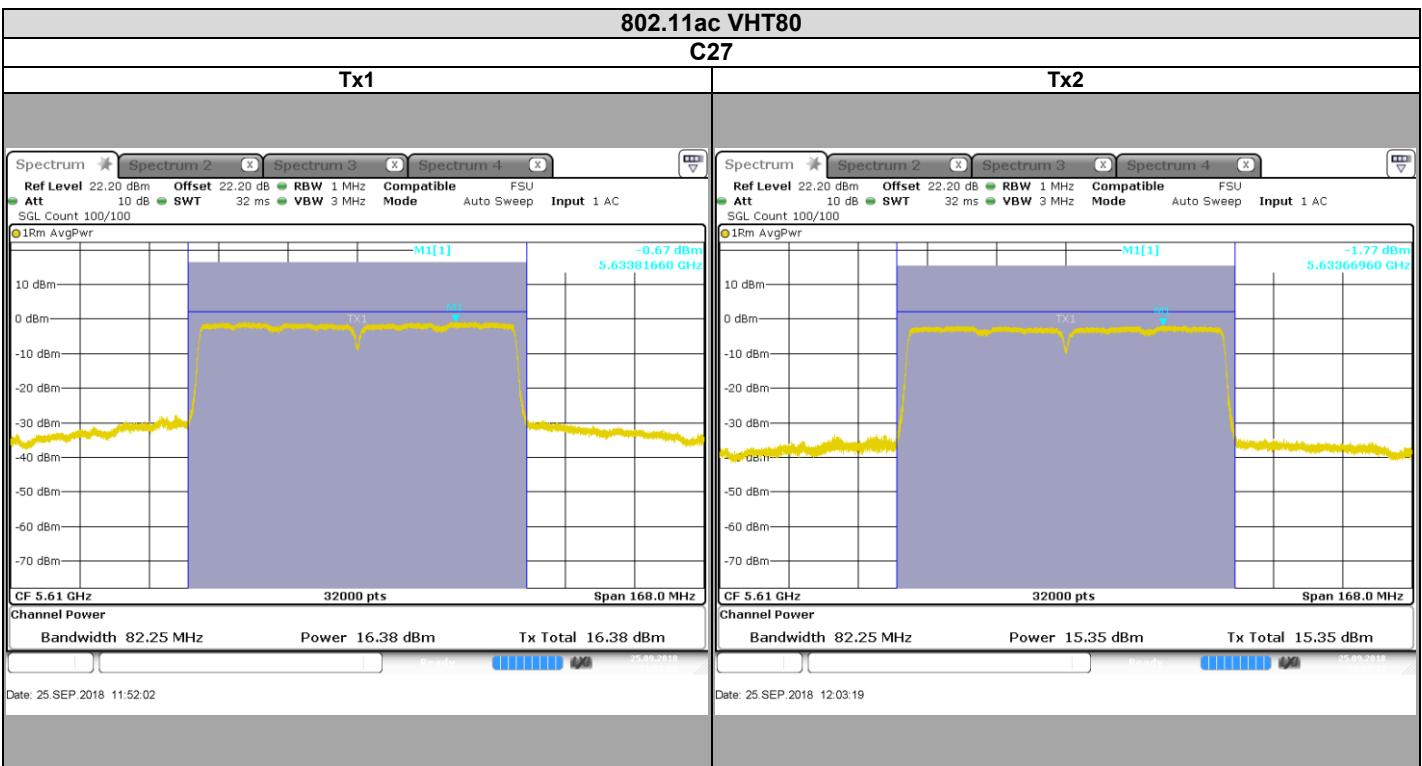


802.11ac VHT80

C27

Tx1

Tx2



TEST REPORT

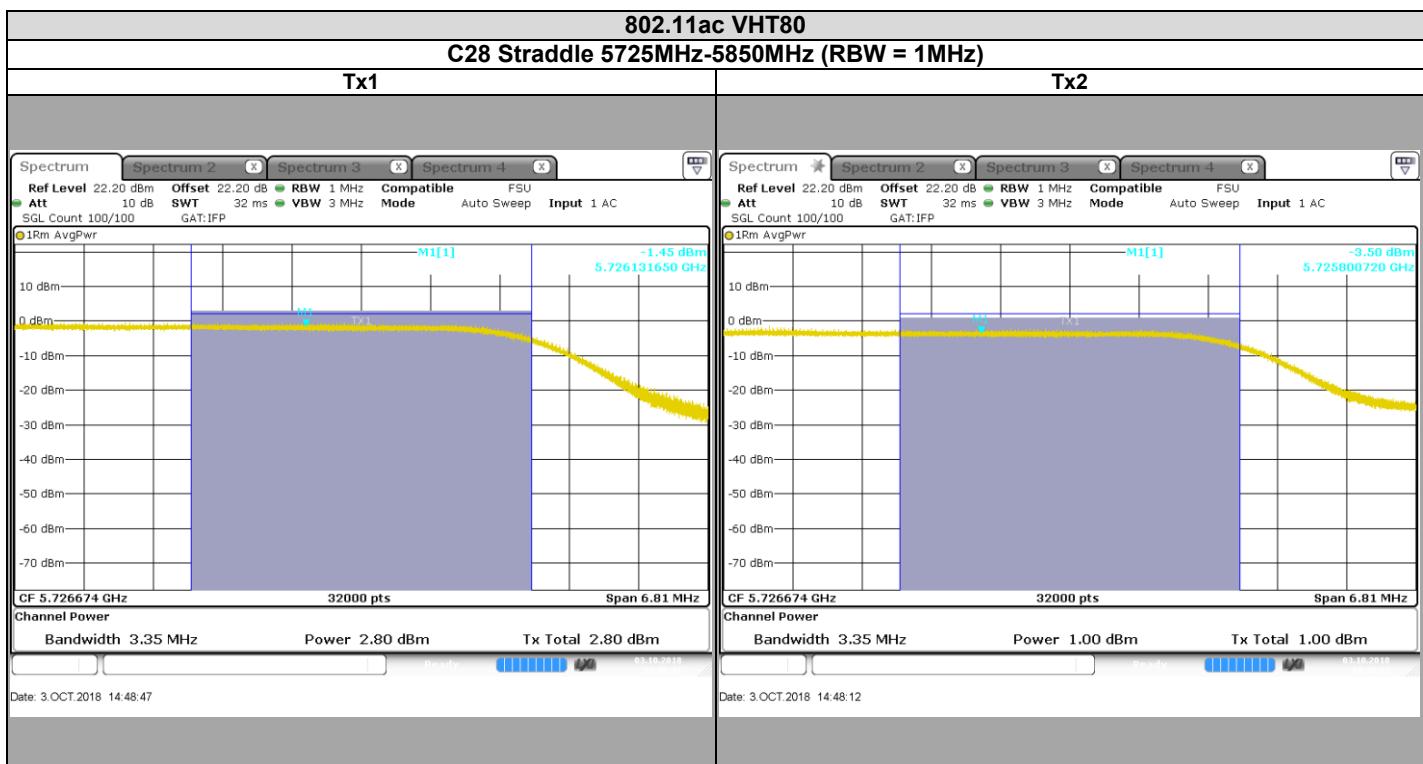
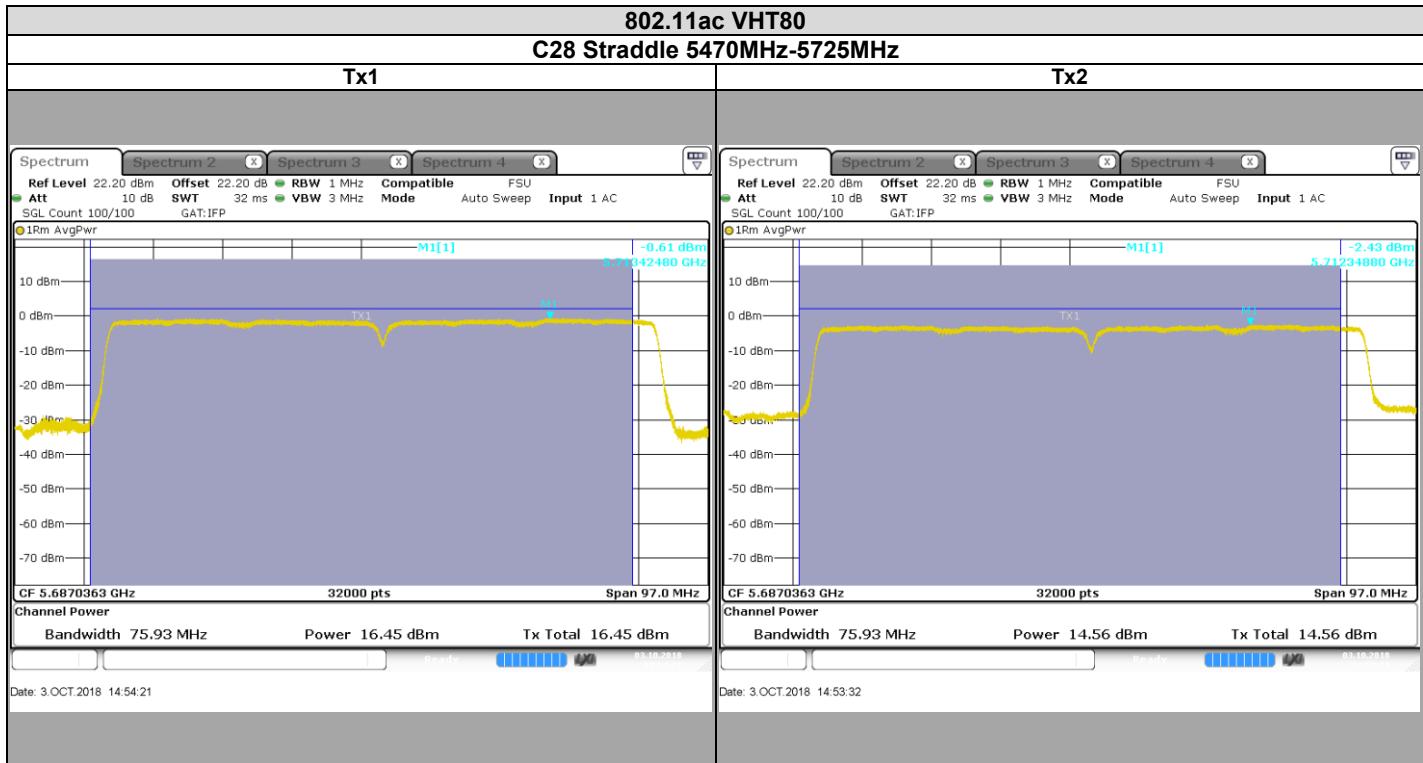
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TEST REPORT

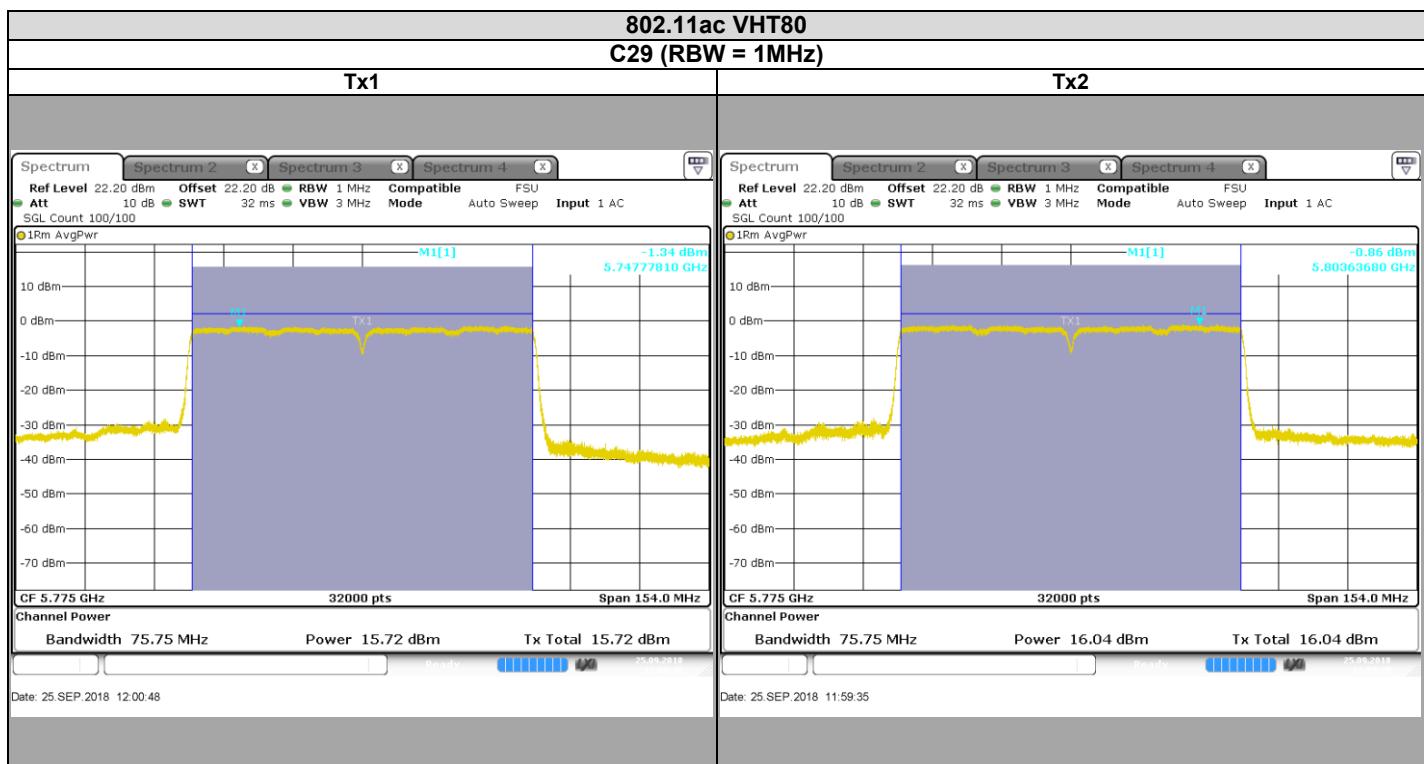
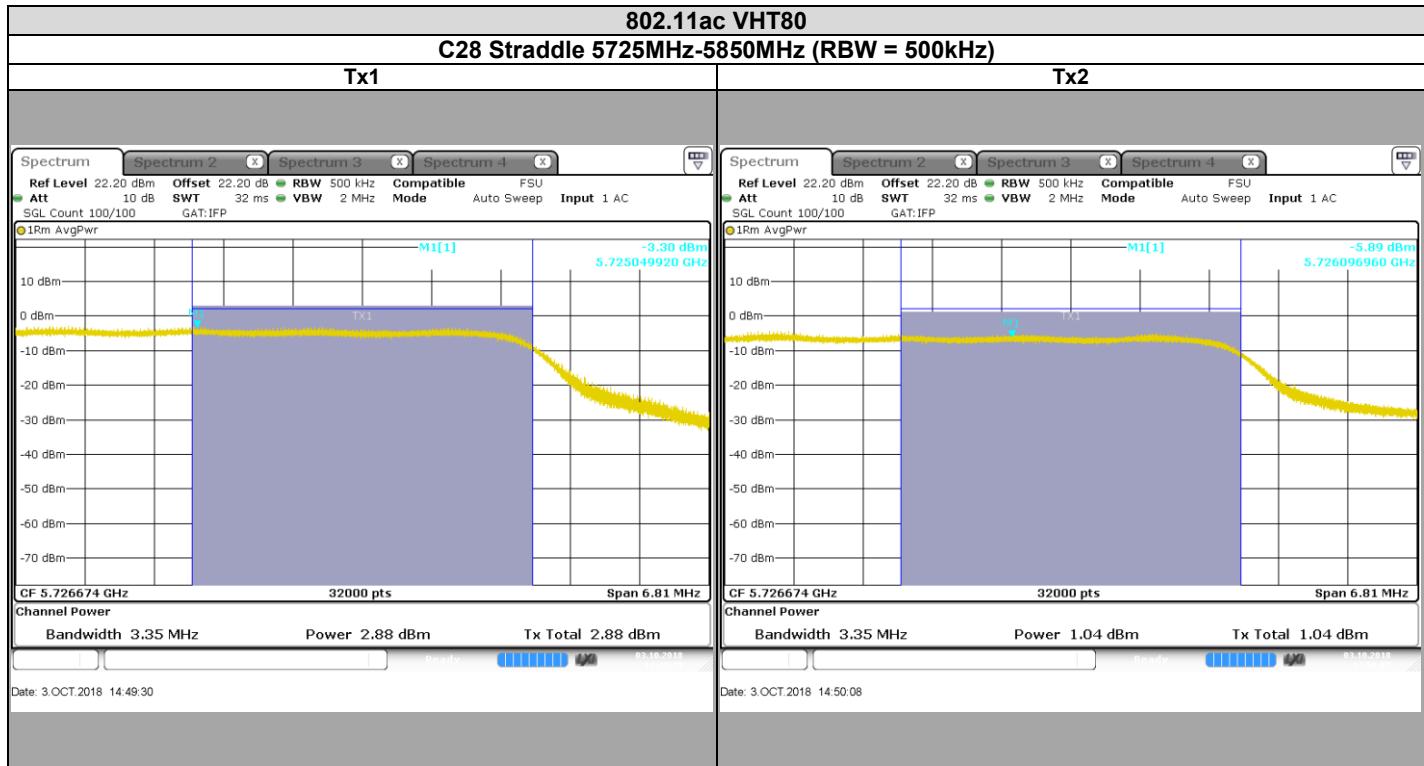
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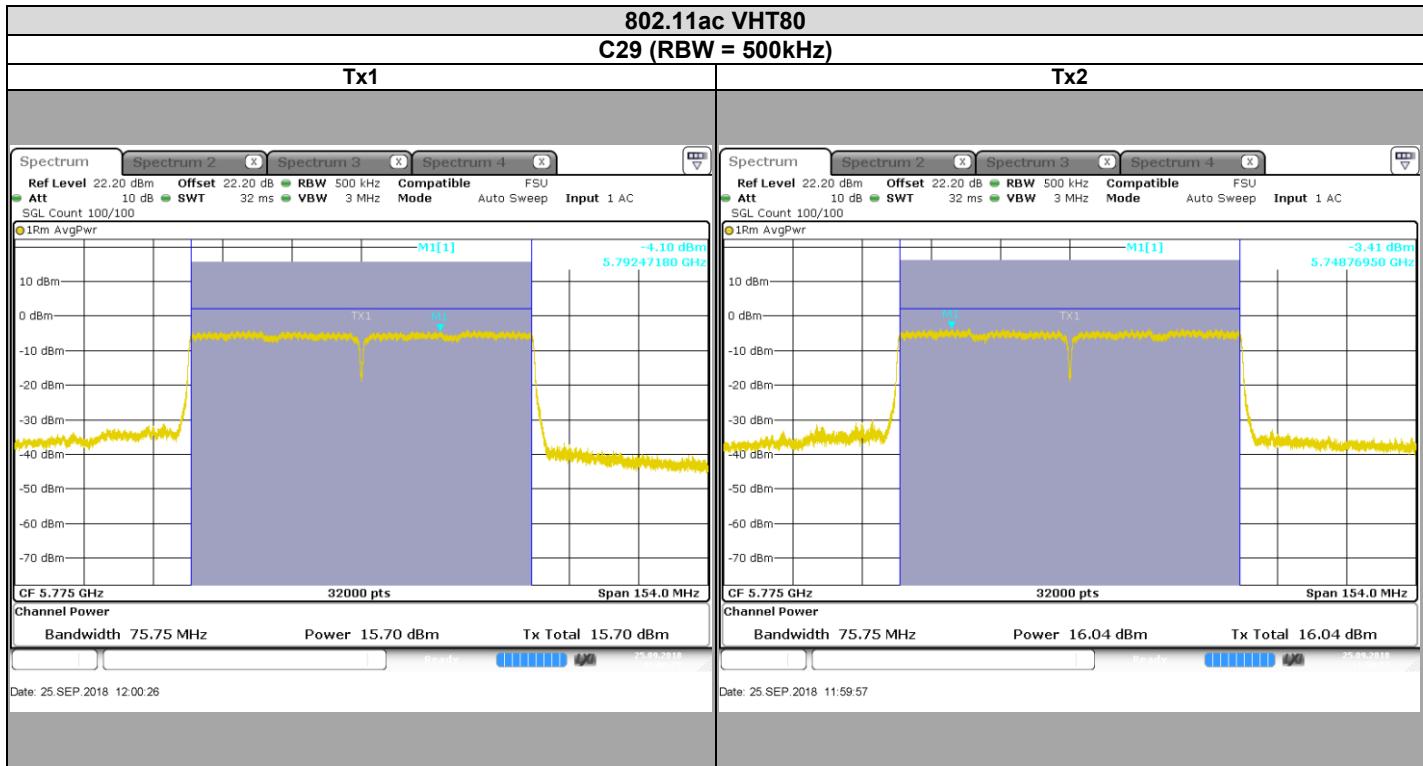


L C I E





L C I E



Maximum Conducted Output Power :

802.11a ANT 1					
Channel	Tx1 (dBm)	AG (dBi)	Tx Limit FCC (dBm)	Tx EIRP (dBm)	TPC requirement
C1	18,0	2,2	24	20,2	
C2	17,9	2,2	24	20,1	
C3	17,8	2,2	24	20,0	
C4	16,9	2,2	24	19,1	TPC si EIRP>27dBm
C5	17,8	2,2	24	20,0	TPC si EIRP>27dBm
C6	16,9	2,2	24	19,1	TPC si EIRP>27dBm
C7	16,8	2,4	24	19,2	TPC si EIRP>27dBm
C8	17,7	2,4	24	20,1	TPC si EIRP>27dBm
C9	14,5	2,4	24	16,9	TPC si EIRP>27dBm
C10 Straddle 5470MHz-5725MHz	15,9	2,4	24	18,3	TPC si EIRP>27dBm
C10 Straddle 5725MHz-5850MHz	9,9	2,4	30	12,3	TPC si EIRP>27dBm
C11	18,5	2,4	30		
C12	18,4	2,4	30		
C13	18,2	2,4	30		



L C I E

802.11a ANT 2

Channel	Tx2 (dBm)	AG (dBi)	Tx Limit FCC (dBm)	Tx EIRP (dBm)	TPC requirement
C1	19,7	1,9	24	21,6	
C2	19,3	1,9	24	21,2	
C3	18,9	1,9	24	20,8	
C4	18,2	1,9	24	20,1	TPC si EIRP>27dBm
C5	18,3	1,9	24	20,2	TPC si EIRP>27dBm
C6	17,6	1,9	24	19,5	TPC si EIRP>27dBm
C7	14,6	3,4	24	18,0	TPC si EIRP>27dBm
C8	15,6	3,4	24	19,0	TPC si EIRP>27dBm
C9	11,9	3,4	24	15,3	TPC si EIRP>27dBm
C10 Straddle 5470MHz-5725MHz	14,1	3,4	24	17,5	TPC si EIRP>27dBm
C10 Straddle 5725MHz-5850MHz	8,0	3,4	30	11,4	TPC si EIRP>27dBm
C11	18,5	3,4	30		
C12	18,5	3,4	30		
C13	18,5	3,4	30		

802.11n HT20/ac VHT20

Channel	Tx1 (dBm)	Tx2 (dBm)	TxAII (dBm)	AG (dBi)	Tx Limit FCC (dBm)	Tx EIRP (dBm)	EIRP Limit FCC (dBm)
C1	16,86	16,68	19,8	5,1	24	24,9	
C2	18,13	16,56	20,4	5,1	24	25,5	
C3	16,21	17,21	19,7	5,1	24	24,8	
C4	17,52	18,66	21,1	5,1	24	26,2	TPC si EIRP>27dBm
C5	18,38	19,02	21,7	5,1	24	26,8	TPC si EIRP>27dBm
C6	15,52	16,35	19,0	5,1	24	24,0	TPC si EIRP>27dBm
C7	16,55	13,84	18,4	5,9	24	24,3	TPC si EIRP>27dBm
C8	17,53	15,12	19,5	5,9	24	25,4	TPC si EIRP>27dBm
C9	14,35	10,87	16,0	5,9	24	21,9	TPC si EIRP>27dBm
C10 Straddle 5470MHz-5725MHz	15,02	12,99	17,1	5,9	24	23,0	TPC si EIRP>27dBm
C10 Straddle 5725MHz-5850MHz	9,47	7,41	11,6	5,9	30	17,5	TPC si EIRP>27dBm
C11	17,24	17,64	20,5	5,9	30		
C12	17,23	17,56	20,4	5,9	30		
C13	17,14	17,39	20,3	5,9	30		

802.11n HT40/ac VHT40

Channel	Tx1 (dBm)	Tx2 (dBm)	TxAII (dBm)	AG (dBi)	Tx Limit FCC (dBm)	Tx EIRP (dBm)	EIRP Limit FCC (dBm)
C14	14,34	13,72	17,1	5,1	24	22,1	
C15	17,36	18,43	20,9	5,1	24	26,0	
C16	16,45	17,65	20,1	5,1	24	25,2	TPC si EIRP>27dBm
C17	10,75	13,53	15,4	5,1	24	20,4	TPC si EIRP>27dBm
C18	12,13	11,79	15,0	5,9	24	20,9	TPC si EIRP>27dBm
C19	17,6	16,88	20,3	5,9	24	26,2	TPC si EIRP>27dBm
C20	16,19	15,03	18,7	5,9	24	24,6	TPC si EIRP>27dBm
C21 Straddle 5470MHz-5725MHz	16,68	14,94	18,9	5,9	24	24,8	TPC si EIRP>27dBm
C21 Straddle 5725MHz-5850MHz	6,99	5,23	9,2	5,9	30	15,1	TPC si EIRP>27dBm
C22	16,7	16,32	19,5	5,9	30		
C23	16,55	16,21	19,4	5,9	30		



L C I E

802.11ac VHT80

Channel	Tx1 (dBm)	Tx2 (dBm)	TxAII (dBm)	AG (dBi)	Tx Limit FCC (dBm)	Tx EIRP (dBm)	EIRP Limit FCC (dBm)
C24	12,73	12,12	15,4	5,1	24	20,5	
C25	11,92	13,12	15,6	5,1	24	20,6	TPC si EIRP>27dBm
C26	10,44	10,16	13,3	5,9	24	19,2	TPC si EIRP>27dBm
C27	16,38	15,35	18,9	5,9	24	24,8	TPC si EIRP>27dBm
C28 Straddle 5470MHz-5725MHz	16,45	14,56	18,6	5,9	24	24,5	TPC si EIRP>27dBm
C28 Straddle 5725MHz-5850MHz	2,8	1	5,0	5,9	30	10,9	
C29	15,72	16,04	18,9	5,9	30	24,8	

Power Spectral Density :

802.11a ANT 1

Channel	Tx1(dBmMHz)	AG (dBi)	Tx Limit FCC (dBm/MHz)
C1	7,3	2,2	11
C2	7,3	2,2	11
C3	7,3	2,2	11
C4	6,3	2,2	11
C5	7,3	2,2	11
C6	6,4	2,2	11
C7	6,3	2,4	11
C8	7,2	2,4	11
C9	4,0	2,4	11
C10 Straddle 5470MHz-5725MHz	6,4	2,4	11
C10 Straddle 5725MHz-5850MHz	3,5	2,4	30 (/500kHz)
C11	5,2	2,4	30 (/500kHz)
C12	5,3	2,4	30 (/500kHz)
C13	5,0	2,4	30 (/500kHz)

802.11a ANT 2

Channel	Tx2(dBmMHz)	AG (dBi)	Tx Limit FCC (dBm/MHz)
C1	9,2	1,9	11
C2	8,8	1,9	11
C3	8,0	1,9	11
C4	7,6	1,9	11
C5	7,8	1,9	11
C6	7,0	1,9	11
C7	4,1	3,4	11
C8	5,2	3,4	11
C9	0,2	3,4	11
C10 Straddle 5470MHz-5725MHz	4,5	3,4	11
C10 Straddle 5725MHz-5850MHz	1,2	3,4	30 (/500kHz)
C11	5,4	3,4	30 (/500kHz)
C12	5,5	3,4	30 (/500kHz)
C13	5,3	3,4	30 (/500kHz)



L C I E

802.11n HT20/ac VHT20

Channel	Tx1 (dBm/MHz)	Tx2 (dBm/MHz)	TxAll (dBmMHz)	AG (dBi)	Tx Limit FCC (dBm/MHz)
C1	6,11	5,95	9,0	5,1	11
C2	7,41	5,72	9,7	5,1	11
C3	5,55	6,44	9,0	5,1	11
C4	6,73	7,8	10,3	5,1	11
C5	7,52	8,28	10,9	5,1	11
C6	4,84	5,66	8,3	5,1	11
C7	5,65	3,13	7,6	5,9	11
C8	6,76	4,36	8,7	5,9	11
C9	3,58	0,14	5,2	5,9	11
C10 Straddle 5470MHz-5725MHz	5,2	3,28	7,4	5,9	11
C10 Straddle 5725MHz-5850MHz	2,46	0,44	4,6	5,9	30 (/500kHz)
C11	3,86	4,3	7,1	5,9	30 (/500kHz)
C12	4,1	4,33	7,2	5,9	30 (/500kHz)
C13	3,9	4,02	7,0	5,9	30 (/500kHz)

802.11n HT40/ac VHT40

Channel	Tx1 (dBm/MHz)	Tx2 (dBm/MHz)	TxAll (dBmMHz)	AG (dBi)	Tx Limit FCC (dBm/MHz)
C14	0,72	0,15	3,5	5,1	11
C15	3,92	4,99	7,5	5,1	11
C16	2,81	4,06	6,5	5,1	11
C17	-2,8	0,15	1,9	5,1	11
C18	-1,26	-1,77	1,5	5,9	11
C19	3,99	3,42	6,7	5,9	11
C20	2,71	1,51	5,2	5,9	11
C21 Straddle 5470MHz-5725MHz	3,44	1,99	5,8	5,9	11
C21 Straddle 5725MHz-5850MHz	-0,26	-1,71	2,1	5,9	30 (/500kHz)
C22	0,55	0,18	3,4	5,9	30 (/500kHz)
C23	0,81	0,05	3,5	5,9	30 (/500kHz)

802.11ac VHT80

Channel	Tx1 (dBm/MHz)	Tx2 (dBm/MHz)	TxAll (dBmMHz)	AG (dBi)	Tx Limit FCC (dBm/MHz)
C24	-4,41	-4,86	-1,6	5,1	11
C25	-5,23	-3,88	-1,5	5,1	11
C26	-6,63	-6,77	-3,7	5,9	11
C27	-0,67	-1,77	1,8	5,9	11
C28 Straddle 5470MHz-5725MHz	-0,61	-2,43	1,6	5,9	11
C28 Straddle 5725MHz-5850MHz	-3,3	-5,89	-1,4	5,9	30 (/500kHz)
C29	-4,1	-3,41	-0,7	5,9	30 (/500kHz)



8.2. CONCLUSION

Maximum Conducted Output Power, Maximum Power Spectral Density, Maximum EIRP, Maximum EIRP Power Spectral Density measurement performed on the sample of the product **Sagemcom® Sound Box SBDV01**, SN: **253770742**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.407** limits.



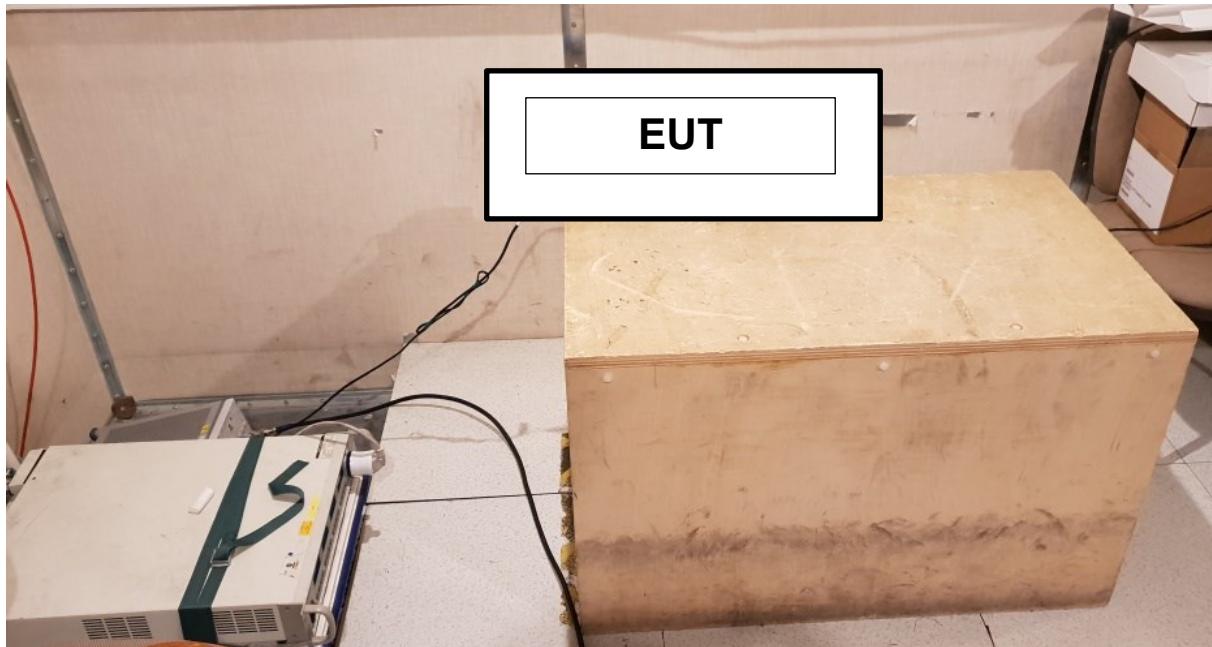
9. AC POWER LINE CONDUCTED EMISSIONS

9.1. TEST CONDITIONS

Test performed by : Armand MAHOUNGOU
Date of test : September 24, 2018
Ambient temperature : 23 °C
Relative humidity : 44 %

9.2. TEST SETUP

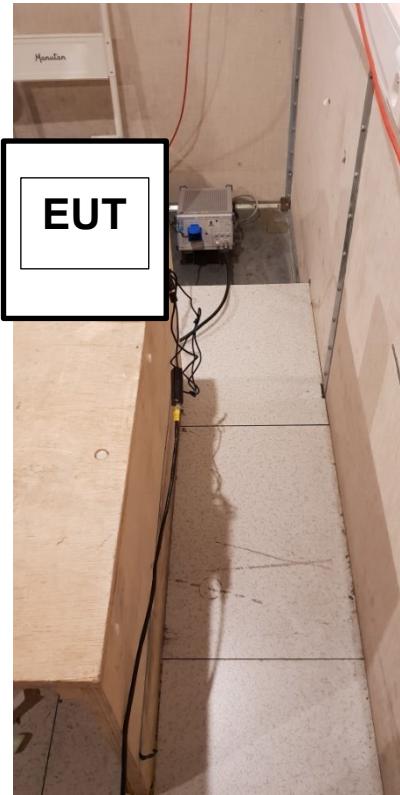
The product has been tested according to ANSI C63.10 (2013) method. The EUT is placed on the ground reference plane, at 80cm from the LISN. The distance between the EUT and the vertical ground plane is 40cm. Auxiliaries are powered by another LISN. The cable has been shorted to 1meter length. The EUT is powered through the LISN. Measurement is made with a receiver in peak mode. This was followed by a Quasi-Peak, i.e. CISPR measurement for any strong signal. If the average limit is met when using a Quasi-Peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary. The LISN (measure) is $50\Omega / 50\mu\text{H}$. Interconnecting cables and equipment's were moved to position that maximized emission.



Photograph for AC Power Line Conducted Emissions (Front view)



L C I E



Photograph for AC Power Line Conducted Emissions (Rear view)



9.3. LIMIT

Quasi-Peak

0,15kHz to 0,5MHz: 66dB μ V to 56dB μ V*

0,5MHz to 5MHz: 56dB μ V

5MHz to 30MHz: 60dB μ V

Average

0,15kHz to 0,5MHz: 56dB μ V to 46dB μ V*

0,5MHz to 5MHz: 46dB μ V

5MHz to 30MHz: 50dB μ V

*Decreases with the logarithm of the frequency

9.4. TEST EQUIPMENT LIST

Description	Constructor	Model	Nº	Cal. Date	Cal. Due
EMI Receiver	ROHDE & SCHWARZ	ESU26	A2642018	2016/10	2018/10
RSIL	ROHDE & SCHWARZ	ENV215	C2320162	2018/01	2019/01
Cable	-	-	A5329712	2018/03	2019/03

9.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None

Divergence:



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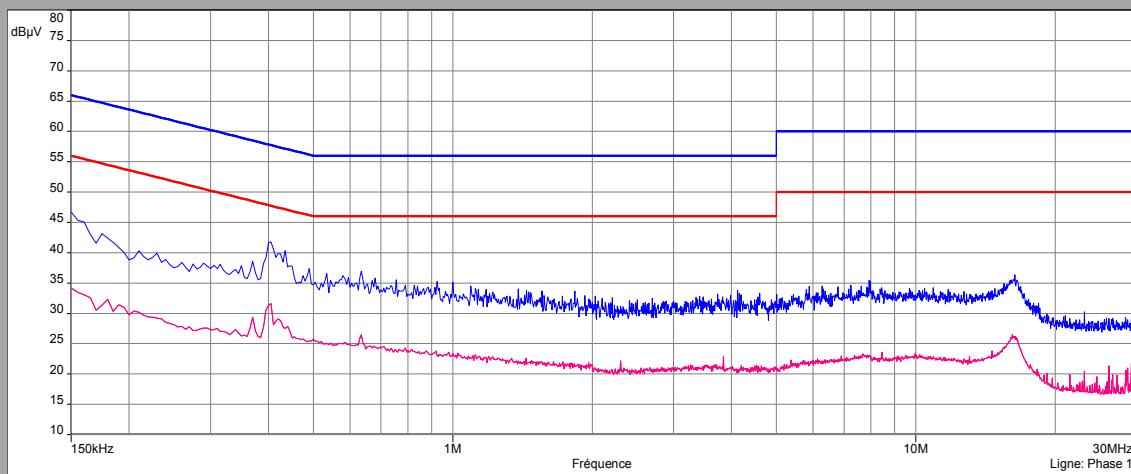
9.6. RESULTS

120V / 60Hz

Phase

Description Sous-bande 1
Fréquences: 150 kHz - 30 MHz (Mode: Lin, Pas: 5 kHz)
Réglages: RBW: 9kHz, VBW: Auto, Durée balayage : 50 ms/Pts, Atténuation : 10 dB, Nombre de Balayages : 1, Preamp : Off, LN Preamp : Off, Préselecteur: On
Ligne: Phase 1

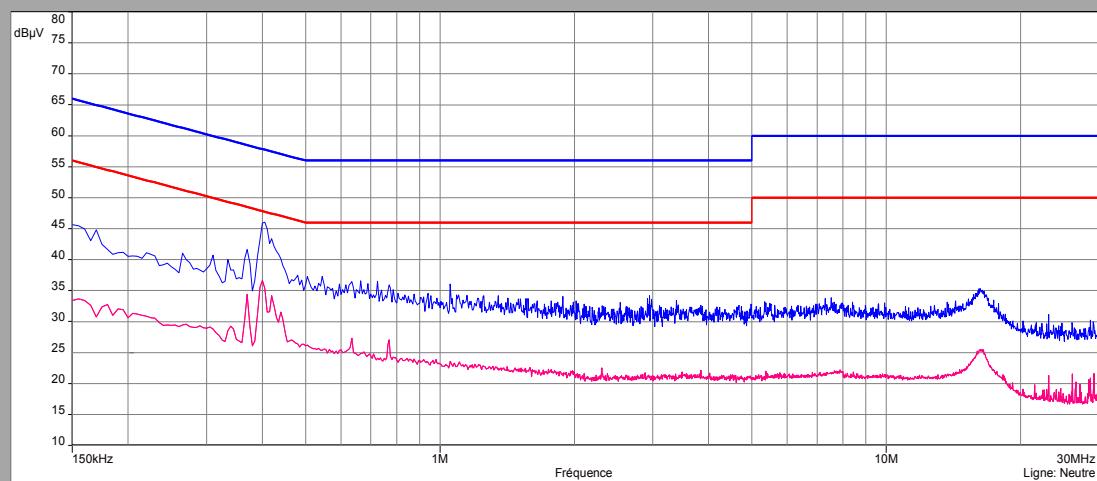
FCC/FCC 15.107 - Classe:B - Moyenne/
FCC/FCC 15.107 - Classe:B - QCréte/
FCC/FCC 15.207 - Classe:B - Moyenne/
FCC/FCC 15.207 - Classe:B - QCréte/
Mes.Peak (Phase 1)
Mes.Avg (Phase 1)



Line

Description Sous-bande 2
Fréquences: 150 kHz - 30 MHz (Mode: Lin, Pas: 5 kHz)
Réglages: RBW: 9kHz, VBW: Auto, Durée balayage : 50 ms/Pts, Atténuation : 10 dB, Nombre de Balayages : 1, Preamp : Off, LN Preamp : Off, Préselecteur: On
Ligne: Neutre

FCC/FCC 15.107 - Classe:B - Moyenne/
FCC/FCC 15.107 - Classe:B - QCréte/
FCC/FCC 15.207 - Classe:B - Moyenne/
FCC/FCC 15.207 - Classe:B - QCréte/
Mes.Peak (Neutre)
Mes.Avg (Neutre)





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Phase Line 120V / 60Hz							
Frequency (MHz)	Peak Level (dB μ V)	Quasi-Peak Level (dB μ V)	Quasi-Peak Limit (dB μ V)	Margin Quasi-Peak (dB)	Average Level (dB μ V)	Average Limit (dB μ V)	Margin Average (dB)
0.41	41.80	-	57.65	15.85	31.65	47.65	16
0.64	37	-	56	19	26.45	46	19.55
3.840	33.26	-	56	22.74	22.86	46	23.14
23.13	29.75	-	60	30.25	21.20	50	28.8
26.11	30.49	-	60	29.51	21.44	50	28.56
29.23	29.65	-	60	30.35	21.64	50	28.36

Neutral Line 120V / 60Hz							
Frequency (MHz)	Peak Level (dB μ V)	Quasi-Peak Level (dB μ V)	Quasi-Peak Limit (dB μ V)	Margin Quasi-Peak (dB)	Average Level (dB μ V)	Average Limit (dB μ V)	Margin Average (dB)
0.41	45.56	-	57.65	12.09	38.59	47.65	9.06
0.77	34.78	-	56	21.22	26.64	46	19.36
3.840	32.90	-	56	23.1	22.20	46	23.8
23.13	30.34	-	60	29.66	20.67	50	29.33
26.11	29.20	-	60	30.8	21.31	50	28.69
29.23	30.3	-	60	29.7	21.84	50	28.16



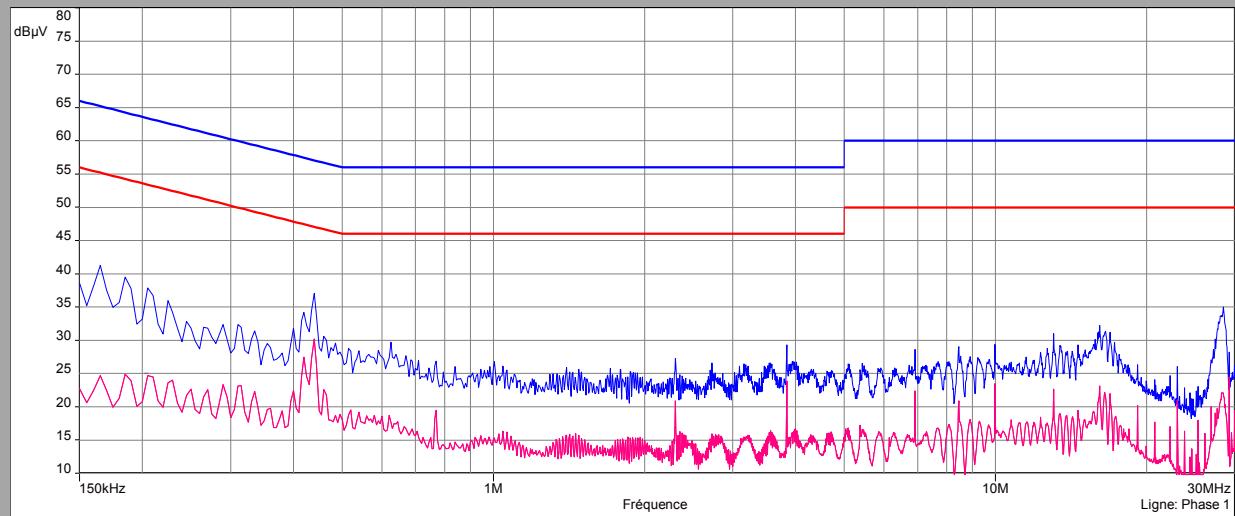
L C I E

240V / 50Hz

Phase

Description Sous-bande 1
Fréquences: 150 kHz - 30 MHz (Mode: Lin, Pas: 5 kHz)
Réglages: RBW: 9kHz, VBW: Auto, Durée balayage : 50 ms/Pts, Atténuation : 10 dB, Nombre de Balayages : 1, Preamp : Off, LN Preamp : Off, Preselecteur: On
Ligne:Phase 1

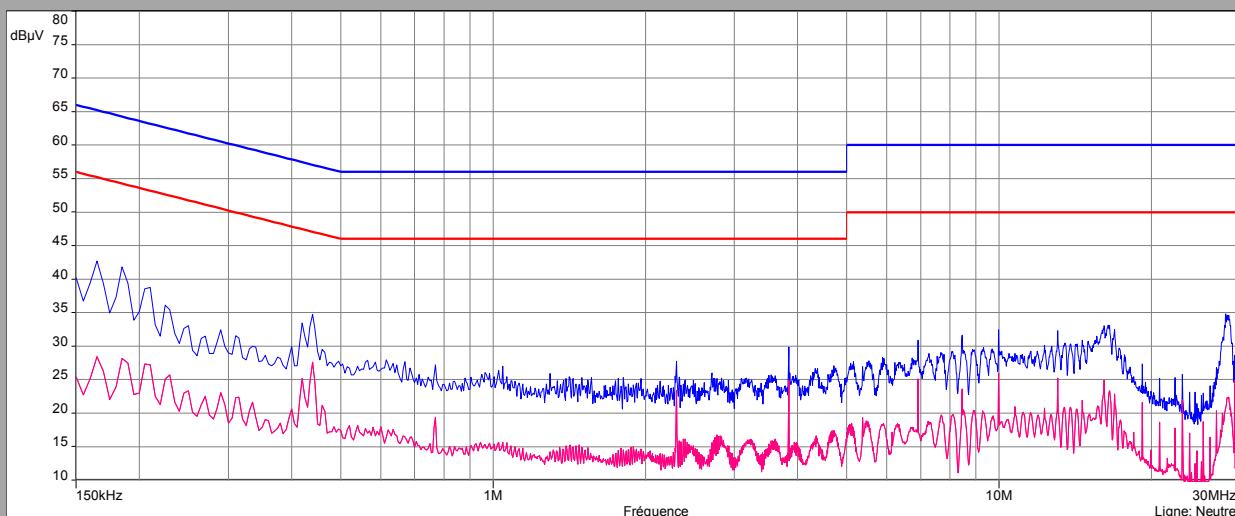
FCC/FCC 15.107 - Classe:B - Moyenne/
FCC/FCC 15.107 - Classe:B - QCréte/
Mes.Peak (Phase 1)
Mes.Avg (Phase 1)



Line

Description Sous-bande 2
Fréquences: 150 kHz - 30 MHz (Mode: Lin, Pas: 5 kHz)
Réglages: RBW: 9kHz, VBW: Auto, Durée balayage : 50 ms/Pts, Atténuation : 10 dB, Nombre de Balayages : 1, Preamp : Off, LN Preamp : Off, Preselecteur: On
Ligne:Neutre

FCC/FCC 15.107 - Classe:B - Moyenne/
FCC/FCC 15.107 - Classe:B - QCréte/
Mes.Peak (Neutre)
Mes.Avg (Neutre)





L C I E

Phase Line 240V / 50Hz							
Frequency (MHz)	Peak Level (dB μ V)	Quasi-Peak Level (dB μ V)	Quasi-Peak Limit (dB μ V)	Margin Quasi-Peak (dB μ V)	Average Level (dB μ V)	Average Limit (dB μ V)	Margin Average (dB μ V)
0.44	37.06	-	57.06	20.0	30.17	47.06	16.89
2.305	27.27	-	56	28.73	20.89	46	25.11
3.840	29.32	-	56	26.68	23.89	46	22.11
13.05	31.02	-	60	28.98	22.62	50	27.38
16.13	27.80	-	60	20.80	23.12	50	26.88
28.22	35.02	-	60	24.98	22.11	50	27.89

Neutral Line 240V / 50Hz							
Frequency (MHz)	Peak Level (dB μ V)	Quasi-Peak Level (dB μ V)	Quasi-Peak Limit (dB μ V)	Margin Quasi-Peak (dB μ V)	Average Level (dB μ V)	Average Limit (dB μ V)	Margin Average (dB μ V)
0.44	34.74	-	57.06	22.32	27.59	47.06	19.47
2.305	27.75	-	56	28.25	23.37	46	22.63
3.840	29.88	-	56	26.12	24.91	46	21.09
13.05	32.30	-	60	27.70	25.23	50	24.77
16.13	33.12	-	60	26.88	24.86	50	25.14
28.22	34.82	-	60	25.18	22.33	50	27.67

9.7. CONCLUSION

Ac Power Line Conducted Emission measurement performed on the sample of the product **Sagemcom® Sound Box SBDV01**, SN: **253770742**, in configuration and description presented in this test report, show levels compliant to the 47 CFR PART 15.407 limits.



L C I E

10. UNWANTED EMISSIONS & UNDESIRABLE EMISSION

10.1. TEST CONDITIONS

Test performed by : Armand MAHOUNGOU
Date of test : September 13, 2018 to September 21, 2018
Ambient temperature : 26°C & 24°C
Relative humidity : 44% & 47%

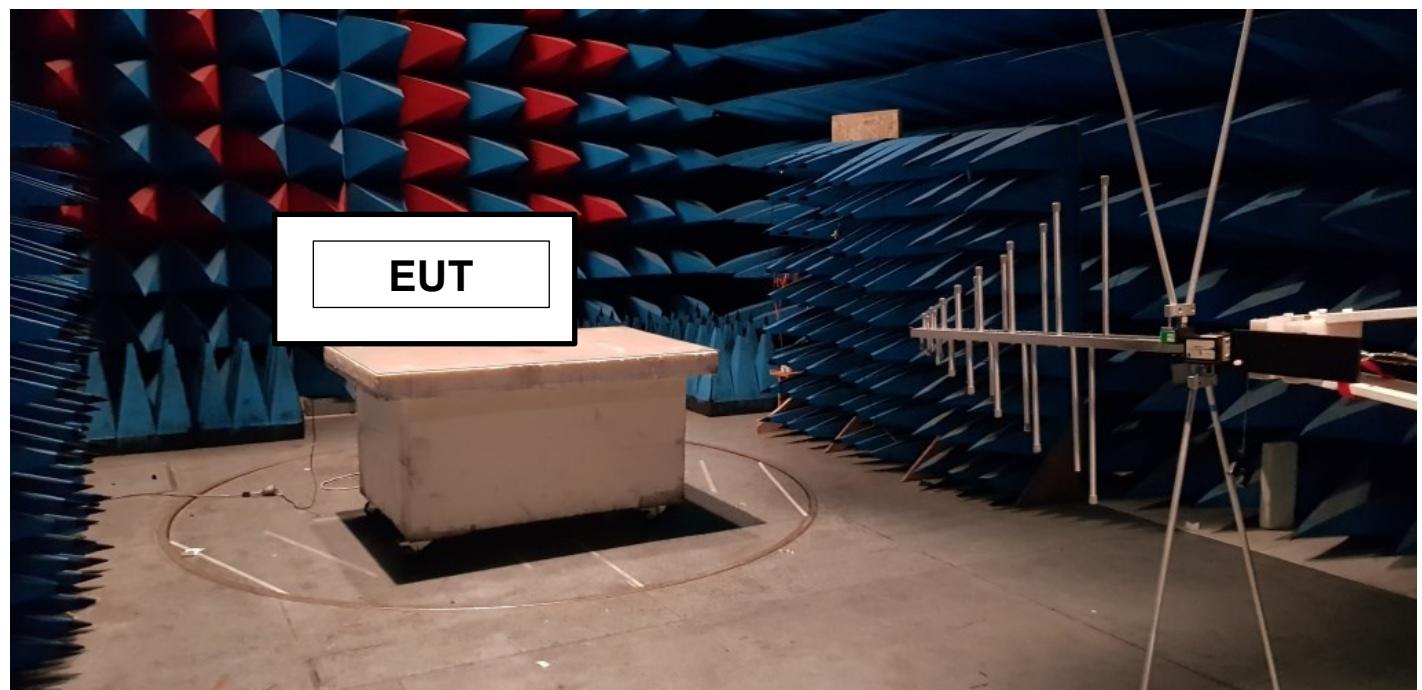
10.2. TEST SETUP

The product has been tested according to ANSI C63.10 (2013).

Test is performed in parallel, perpendicular and ground parallel axis with a loop antenna below 30MHz. Measurement bandwidth was 200Hz below 150kHz and 9kHz between 150kHz & 30MHz. The level has been maximised by the turntable rotation of 360 degrees range on the 3 axis of EUT. Antenna height was 1m. The EUT is placed **in a semi-anechoic chamber**. Distance between measuring antenna and the EUT is **3m**.

Test is performed in horizontal (H) and vertical (V) polarization with **bilog** between 30MHz & 1GHz and with a horn antenna above 1GHz. Measurement bandwidth was 120kHz below 1GHz and 1MHz above 1GHz. The level has been maximised by the turntable rotation of 360 degrees range on the 3 axis of EUT. Antenna height search was performed from 1 to 4m. The EUT is place at 1.5m high above 1GHz and at 0.8m high under 1GHz. The EUT is placed **in a full anechoic chamber** above 1GHz and **in a semi-anechoic chamber** from 30MHz to 1GHz. Distance between measuring antenna and the EUT is **3m**.

The product has been tested according to the FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01. The following factor is applied to convert $E[\text{dB}\mu\text{V}/\text{m}]$ to $\text{EIRP}[\text{dBm}]$. $\text{EIRP}[\text{dBm}] = E[\text{dB}\mu\text{V}/\text{m}] + 20 \log(d[\text{meters}]) - 104.77$



Photograph for Unwanted Emissions & Undesirable Emission limits