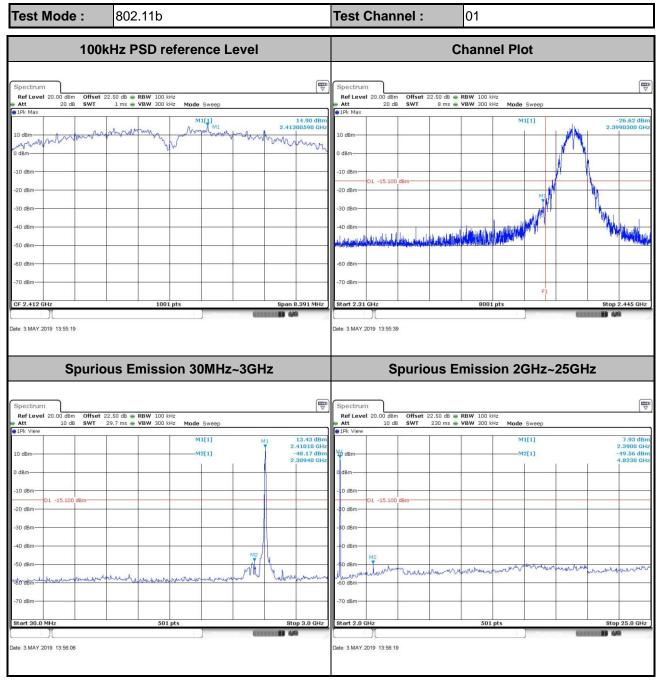


| Test Mode : | 802.11ac VHT40 | Тез | st Channel : | 09 | |
|---|---|---|----------------------------------|---|---------------------------------------|
| 100 | 100kHz PSD reference Level | | Channel Plot | | |
| Att 20 dB SWT IPk Max lo dBm | 2.447 | Ref 0.54 dBm 0250 GHz 10 dB -10 dC -20 dB -0.46 -0.46 -50 dE -50 dE -50 dE -70 dE | 20 dB SWT 4 | 50 db • RBW 100 kHz 8 ms • VBW 300 kHz Mode Sweep M1[1] Shirt + Utility and Shirt - Utility and Shirt - Utility and Shirt - Utility and Shirt - Utility - Ut | |
| Spurie | ous Emission 30MHz~3GHz | | Spuriou | s Emission 2GHz | ~25GHz |
| Spectrum Ref Level 20.00 dBm Offset Att 10 dB SWT | 29.7 ms VBW 300 kHz Mode Sweep | | | 50 dB • RBW 100 kHz 10 ms • VBW 300 kHz Mode Sweep M2[1] | (₩) -47.33 dBm |
| 10 dBm | | 7300 GHz 0.39 dBm 4570 GHz 0 dBm 7 -10 dE -20 dE | | | 6.9350 GHz -3.87 dBm 2.4360 GHz |
| -30 dBm -40 dBm -50 dBm -70 dBm -70 dBm | w weeken week | 10 de 10 de 10 de 10 de 50 de 70 de | In M2 Im M2 Im M2 Im M2 | munderaling | and and and a |
| Start 30.0 MHz | 501 pts Stop | 04.2010 | 2.0 GHz 25.Apr.2019 17:22:12 | 501 pts | Stop 25.0 GHz |



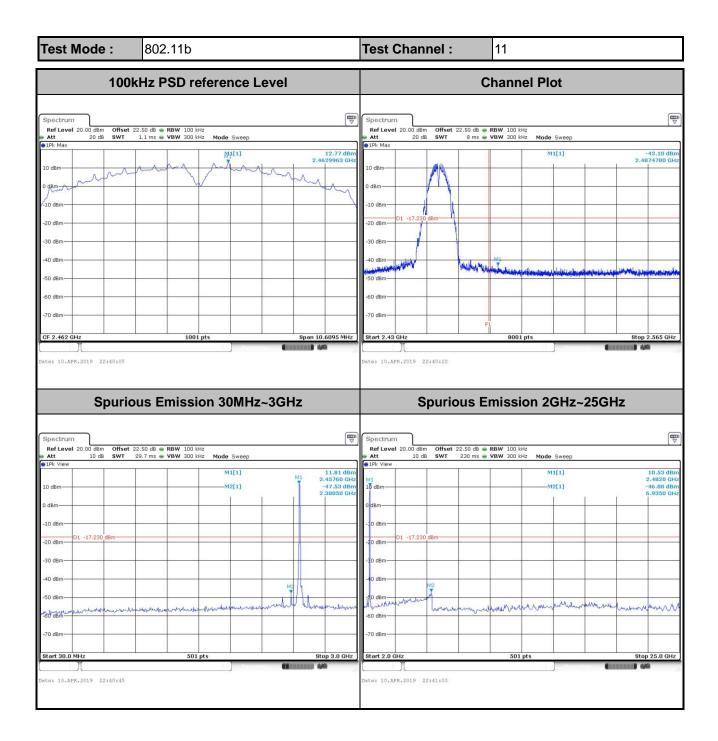
Number of TX = 2, Ant. 2 (Measured)



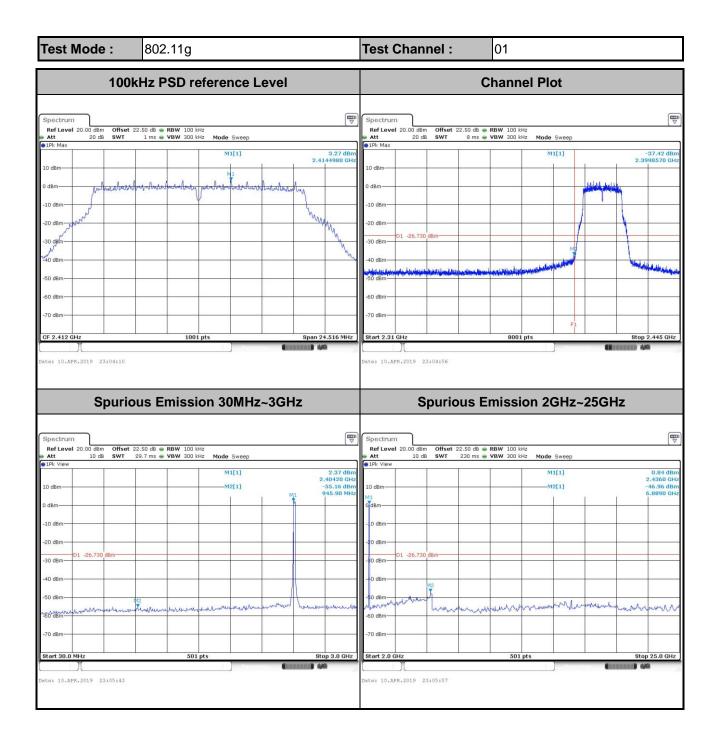


| Test Mode : | 802.11b | Test Cha | annel: 06 | |
|--|---|---|---|---|
| 100k | Hz PSD reference Level | | Channel Plot | |
| Spectrum Ref Level 20.00 dbm Offset 2: 10 dbm SWT 10 dbm Offset 2: 0 dbm Offset 2: 10 dbm Offset 2: 0 dbm Offset 2: 0 dbm Offset 2: 0 dbm Offset 2: -10 dbm Offset 2: -20 dbm Offset 2: -30 dbm Offset 2: -50 dbm Offset 2: -60 dbm Offset 2: -70 dbm Offset 2: CF 2:437 GHz Offset 2: Date: 10.AFE.2019 22:27:29 22:27:29 | 2.50 dB • RBW 100 kHz 1 ms • VBW 300 kHz Mode Sweep | (\vec{v}) | | |
| Spurio | us Emission 30MHz~3G | Hz | Spurious Emission 2GHz~2 | 25GHz |
| Spectrum Ref Level 20.00 dBm Offset 2: Att 10 dB SWT 2 PIPk View | 29.7 ms 💩 VBW 300 kHz Mode Sweep | e Att 1 | dBm Offset 22.50 dB RBW 100 kH= 10 dB SWT 230 ms VBW 300 kHz Mode Sweep | (\) |
| 10 dBm | M1[1] M2[1] | M1 12.94 dBm 2.4390 GHz 2.27380 GHz 0 dBm -10 dBm | M1[1] M2[1] | 12.09 dBm 2.4360 GHz -45.00 dBm 4.8690 GHz |
| 01 -15.260 dBm -20 dBm -30 dBm -40 dBm | | -20 dBm | 2260 d8m | |
| -50 dBm | research week and a second week of a second s | 40 dem -60 dem -70 dem | not have a second a s | neuronant |
| Start 30.0 MHz | 501 pts | Stop 3.0 GHz | 501 pts | Stop 25.0 GHz |





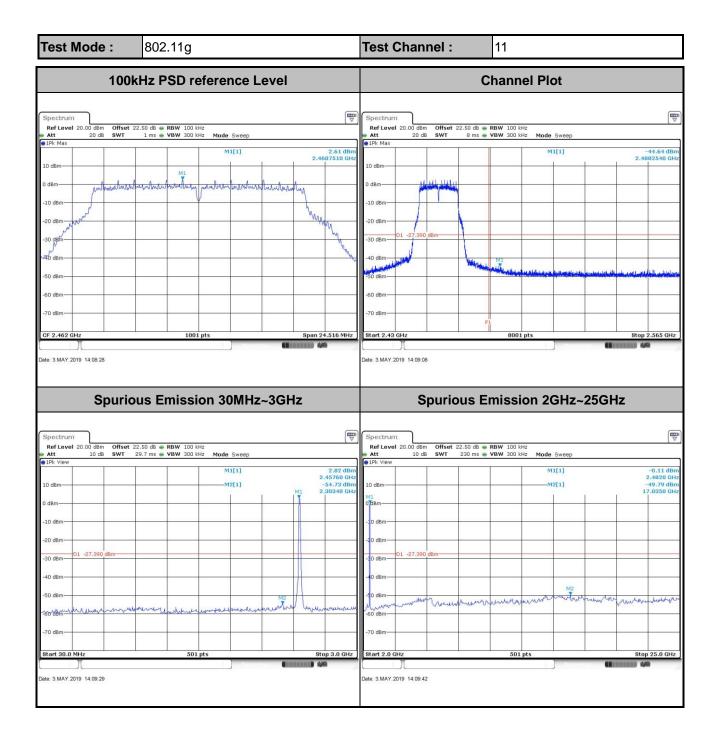






| Test Mode : | 802.11g | Tes | t Channel : | 06 | |
|--|--|---------------------------|--|---|--|
| 100k | Hz PSD reference Level | | | Channel Plot | |
| Att 20 dB SWT 10 dBm | 2.50 dB • RBW 100 kHz 1 ms • VBW 200 kHz Mode Sweep M1[1] MM/MM/MM/MM/MM/MM/MM/MM/MM/MM/MM/MM/MM/ | 9.01 dBm 2.4420150 GHz | | | |
| Spurio | us Emission 30MHz~3GI | Hz | Spurious I | Emission 2GHz~250 | GHz |
| Spectrum Ref Level 20.00 dbm Offset 2: SWT • IPk View • IPk View 10 dbm 0 dbm 10 dbm 0 dbm -10 dbm -20 dbm -30 dbm >30 dbm -30 dbm | 2.50 dB RBW 100 kHz 29.7 ms VBW 300 kHz Mode Sweep M1[1] M2[1] M | | evel 20.00 dbm Offset 22.50 dB 10 dB SWT 230 ms ew 0 db SWT 230 ms 0 d | VBW 300 kHz Mode Sweep Mi[1] M2[1] M2[1] | 8.17 dBm 2.4360 GHz -46.88 dBm 6.9810 GHz |
| Date: 10.APR.2019 23:44:40 | 501 pts | 44 | .0 GHZ | 501 pts | Stop 25.0 GHz) |







| Test Mode : | 802.11ac VHT20 | | Test Channel : | 01 | |
|---|---|--|---|---|--|
| 100 | 100kHz PSD reference Level | | Channel Plot | | |
| Spectrum Ref Level 20.00 dBm Offset Att 20 dB SWT ID dBm 0 0 dBm 10 dBm 0 0 dBm -10 dBm | 122.50 dB @ RBW 100 kHz 1.1 ms @ VBW 300 kHz Mode Sweep M1[1] M1 M2 M2 M2 M2 M2 M2 M2 M2 M2 M2 | 6.03 dBm 2.4107620 GH2 | Spectrum Ref Level 20.00 dBm Offset 22.50 dB • Att 20 dB SWT 8 ms • Ith Max 10 dBm 0 0 0 • 10 dBm 0 0 0 0 0 • 10 dBm 0 0 0 0 0 0 • 20 dBm 0 -23.970 dBm 0 | VBW 300 kHz Mode Sweep M1[1] M1[1] M1[1] M1 M1 | -38,18 dBm 2.9970730 GHz |
| Spuri | ous Emission 30MHz | ~3GHz | Spurious | Emission 2GHz~25G | Hz |
| Spectrum Ref Level 20.00 dBm Offse Att 10 dB SWT | t 22.50 dB ● RBW 100 kHz 29.7 ms ● VBW 300 kHz Mode Sweep | (m | Spectrum Ref Level 20.00 dBm Offset 22.50 dB Att 10 dB SWT 230 ms | RBW 100 kHz VBW 300 kHz Mode Sweep | |
| 1Pk. View 10 dBm 10 dBm -20 dBm -20 dBm -30 dBm -30 dBm -50 dBm -50 dBm -70 dBm | M1[1] M2[1] M2 M2 M2 M2 M2 M2 M2 M2 M2 M2 | 6.34 dBm 2.41610 GHz M1 -54.93 dBm 987.40 MHz 987.40 MHz | 19k View 10 dBm -0 dBm -70 dBm | M1[1] | 4.26 dBm 2.4360 GHz -47.66 dBm 6.9810 GHz |
| Start 30.0 MHz | 501 pts | Stop 3.0 GHz | Start 2.0 GHz | 501 pts | Stop 25.0 GHz |



| Test Mode : | 802.11ac VHT20 | Test Channel : | 06 |
|---|--|--|--|
| 100 | kHz PSD reference Level | Cł | nannel Plot |
| Spectrum Ref Level 20.00 dBm Offset 4tt 20 dB 9 IPk Max 10 dBm 10 dBm 0 dBm -10 dBm | 22.50 db @ RBW 100 kH2 1.1 ms @ VBW 300 kH2 Mode Sweep M1[1] 9.50 db M2[1] 9.50 db AMAMAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA | | |
| Spurio | ous Emission 30MHz~3GHz | Spurious En | nission 2GHz~25GHz |
| Spectrum Ref Level 20.00 dBm Offset Att 10 dB SWT | 22.50 dB ● RBW 100 kHz 29.7 ms ● VBW 300 kHz Mode Sweep | Spectrum RefLevel 20.00 dBm Offset 22.50 dB RE Att 10 dB SWT 230 ms VI IPk View | 3W 100 kHz 3W 300 kHz Mode Sweep |
| 10 dBm 0 dBm -10 dBm -20 dBm -20 dBm -30 dBm -40 dBm -50 dBm -70 dBm -70 dBm -70 dBm -70 dBm -70 dBm | M1[1] 0.85 dB M2[1] M1 2.44570 GH M2[1] 2.24570 GH -52.02 dB 2.29160 GH 2.29160 GH - M1 1.44570 GH - M2[1] M2 2.29160 GH M2 M2 - M3 - | M1 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -0 dBm -0 dBm -0 dBm -0 dBm -10 dB | M1[1] 9.84 GH 2.4360 GH M2[1] -47.15 GB 6.9350 GH |
| Date: 11.APR.2019 02:52:06 | Contraction of the Contraction o | Date: 11.AFR.2019 02:52:25 | Communit (Communit) (449 |



| Test Mode : 802.11ac VHT20 | Test Channel : 11 |
|--|--|
| 100kHz PSD reference Level | Channel Plot |
| Spectrum Image: Spectrum Ref Level 20.00 dbm Offset 22.50 db RBW 100 kHz Mode Sweep I Max 0 db M1[1] 6.35 dbm 10 dbm M1[1] 6.35 dbm 0 dbm M1[1] 6.35 dbm -10 dbm M1[1] 6.35 dbm -20 dbm Muther Max Muther Max -30 dbm Muther Max Muther Max -30 dbm -30 dbm -40 dbm -30 dbm -40 dbm -40 dbm -30 dbm -40 dbm -40 dbm -30 dbm -40 dbm -40 dbm -30 dbm -50 dbm -50 dbm -20 dbm -70 dbm -70 dbm -20 dbm -70 dbm -70 dbm | Spectrum W Ref Lovel 20.00 dBm Offset 22.50 dB * RBW 100 kHz 10 dBm 20 dB * WT 10 dBm M1[1] -43.45 dBm 10 dBm -43.45 dBm 10 dBm 0 dBm 10 dBm |
| Spurious Emission 30MHz~3GHz | Spurious Emission 2GHz~25GHz |
| Spectrum Image: Constraint of the second secon | Spectrum Image: Constraint of the second secon |



| Test Mode : | 802.11ac VHT40 | Test Channel : 03 |
|--|--|--|
| 100kł | Hz PSD reference Level | Channel Plot |
| | 50 db e PBW 100 kHz 1 ms e VBW 300 kHz Mode Sweep M1[1] -0.56 d 2.4169993 C M1 db/dutter/h/hz 1001 pts Spen 52.6875 MI | Hz 2.3970050 GHz 0 dBm |
| Spuriou | s Emission 30MHz~3GHz | Spurious Emission 2GHz~25GHz |
| 1Pk View 10 dBm 0 dBm -10 dBm -20 dBm -20 dBm -30 dBm -50 dBm -50 dBm -50 dBm -50 dBm | | Hz |
| Date: 11.APR.2019 03:39:14 | source (annual) Ma | Date: 11.APR.2019 03:39:28 |



| Test Mode : | 802.11ac VHT40 | Test Channel : 06 | |
|--|---|---|---|
| 100 | 0kHz PSD reference Level | Channel I | Plot |
| Spectrum Ref Level 20.00 dBm Offse Att 20 dB SWT IPIK Max 10 dBm 0 0 dBm -0 dBm -20 dBm | t 22.50 dB e RBW 100 kHz Mode Sweep 1 ms e VBW 300 kHz Mode Sweep | | |
| Spuri | ous Emission 30MHz~3GHz | Spurious Emission | 2GHz~25GHz |
| Spectrum Ref Level 20.00 dlm Offse Att 10 dB 10 dBm 0 10 dBm 0 -10 dBm - -20 dBm - -30 dBm 01 -28,150 dBm -30 dBm - -50 dBm - -50 dBm - -70 dBm - -20 dBm - -30 dBm 01 -28,150 dBm -30 dBm - -70 dBm - -70 dBm - -70 dBm - | 29.7 ms • VBW 300 kHz Mode Sweep | Ref Level 20.00 dBm Offset 22.50 dB . RBW 100 kHz | M1[1] -0.07 dBm 2.4360 GHz -M2[1] -47.87 dBm 6.9350 GHz |
| Stort 30.0 MHz | 501 pts Stop 3.0 GHz | Bitort 2.0 GHz 501 pts | Stop 25.0 GHz |

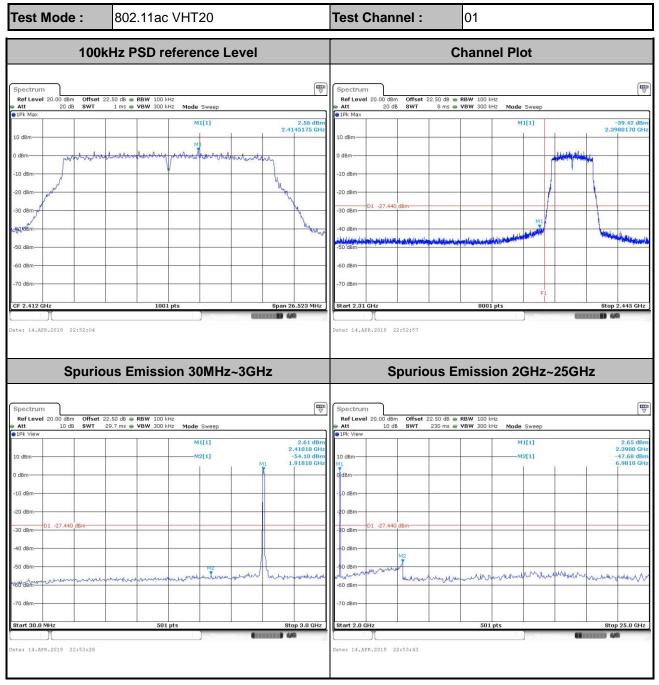


| Test Mode : 802.11ac VHT40 | Test Channel : 09 | |
|--|--|--|
| 100kHz PSD reference Level | Channel Plot | |
| Spectrum Image: Spectrum Ref Level 20.00 dBm Offset 22.50 dB RBW 100 kHz Att 20 dB SWT 1 ms VBW 300 kHz Mode Sweep I Pk Max MI[1] -0.30 dBm -0.30 dBm 10 dBm MI[1] -0.30 dBm -0.30 dBm -10 dBm MI[1] -0.470463 GHz -0.30 dBm -20 dBm MI[1] -0.470463 GHz -0.30 dBm -30 dBm -0.40404 GHz -0.40404 GHz -0.40404 GHz -30 dBm -0.4040 GHz -0.4040 GHz -0.4040 GHz -50 dBm -0.4040 GHz -0.4040 GHz -0.4040 GHz -70 dBm< | Ref Level 20.00 dBm Offset 22.50 dB RBW 100 kHz Mode Sweep IPk Max -43.59 dBm -43.59 dBm <t< th=""></t<> | |
| Spurious Emission 30MHz~3GHz | Spurious Emission 2GHz~25GHz | |
| Spectrum Image: Constraint of the second secon | Spectrum Image: Constraint of the second of th | |



<TXBF Modes>

Number of TX = 2, Ant. 1 (Measured)





| Test Mode : 80 | 2.11ac VHT20 | Test Channel : 06 | |
|--|--|--|--------------------|
| 100kHz | PSD reference Level | Chan | nel Plot |
| Spectrum Ref Level 20.00 dBm Offset 22.50 dB. Att 20 dB SWT 1 ms ID dBm Image: Comparison of the set of | ● VBW 300 kHz Mode Sweep M1[1] 10.06 dBr M1 2.4337515 GH | | |
| Spurious I | Emission 30MHz~3GHz | Spurious Emis | sion 2GHz~25GHz |
| Spectrum Ref Level 20.00 dBm Offset 22.50 dB Att 10 dB SWT 29.7 ms DIPK View | RBW 100 kHz WBW 300 kHz Mode Sweep | Spectrum RefLevel 20.00 dBm Offset 22.50 dB ● RBW 10 Att 10 dB SWT 230 ms ● VBW 30 ● IPk View | |
| 10 dBm 0 dBm 0 dBm 0 dBm -10 dBm | M1[1] 9.05 dBr | 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm -70 dBm | MI[1] 7.95 dBm |



| Test Mode : | 802.11ac VHT20 | Test Channel : 11 |
|--|--|---|
| 100 | kHz PSD reference Level | Channel Plot |
| Att 20 dB SWT PIPk Max 10 dBm | 1 22.50 dB • RBW 100 HH2 1 ms • VBW 300 HH2 Mode Sweep M1[1] 2.46102 M1[1] 2.46102 | 10 dBm |
| Spuri | ous Emission 30MHz~3GHz | Spurious Emission 2GHz~25GHz |
| Att 10 dB SWT • IPk View | 2.463 M2[1] -53.2 M1 2.190 M1 2.190 M3 2.190 M3 2.190 M3 2.190 M3 2.190 M3 2.190 M3 2.190 M3 2.190 M3 2.190 M4 2.1 | dBm 48.86 dBm 6.9350 GHz 0dBm 6.9350 GHz 6.9350 GHz -0 dBm - - -0 dBm - - -10 dBm |
| Stort 30.0 MHz | 501 pts Stop 3.1 | GHz S01 pts Stop 25.0 GHz Date: 14.AFR.2019 23:50:06 |



| Test Mode : | 802.11ac VHT40 | Test Channel : 03 | |
|---|--|--|---------------------------------------|
| 100k | Hz PSD reference Level | Channel Plot | |
| Spectrum Ref Level 20.00 dBm Offset 2: SWT • IPk Max 0 • IPk Max 0 • O dBm 0 < | 2.50 db e RBW 100 kH2 1 ms • VBW 300 kH2 Mode Sweep | Ref Level 20.00 dlm Offset 22.50 dll @ RBW 100 H4z Mat 20 dll B ms @ VBW 200 H4z Mode Sweep @1Pk Max M1[1] 2.9' I 0 dllm 0 dllm 0 0 -0 dllm 01 - 27.260 dllm 0 0 -0 dllm 0 0 0 0 -0 dllm 0 0 0 0 -70 dllm 0 0 0 0 | -96.16 dBm 996710 GHz |
| Spurio | us Emission 30MHz~3GHz | Spurious Emission 2GHz~25GHz | |
| | 2:50 dB = RBW 100 kHz Mode Sweep 29.7 ms = VBW 300 kHz Mode Sweep M1[1] 2.44 dBm M2[1] -54.76 dBm M2[1] -54.76 dBm M1 904.40 MHz M1 904.40 MHz | Perform Mathematical State State <thstate< th=""> State State<th>-1.06 dBm -48.19 dBm 6.8430 GHz</th></thstate<> | -1.06 dBm -48.19 dBm 6.8430 GHz |
| Date: 15.APR.2019 02:57:41 | 501 pts Stop 3.0 GHz | Stort 2.0 GHz S01 pts Stor Date: 15.AFR.2019 02:50:12 02:50:12 | 19 23.0 GHZ) |



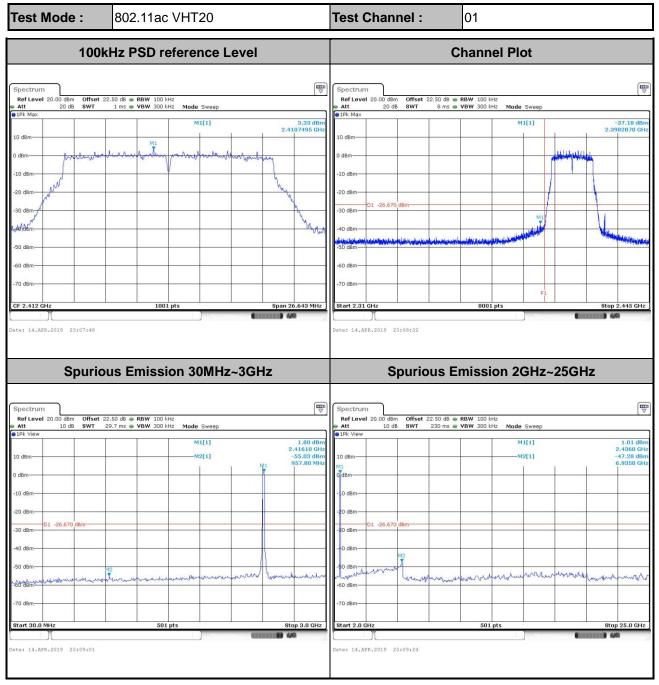
| Test Mode : | 802.11ac VHT40 | Test Channel : 06 | | | |
|--|---|---|---|--|--|
| 100 | 0kHz PSD reference Level | Channel Plot | | | |
| Spectrum Ref level 20.00 dbm Offse Att 20 dB SWT 1Pk Max 10 dbm 0 dbm -10 dbm -20 dbm -20 dbm -30 dbm -20 dbm -20 dbm -20 dbm -20 dbm -20 dbm -50 dbm -50 dbm -50 dbm -70 dbm -70 dbm Date: 15.APR.2019 02:30:54 | Ims # VBW 100 kHz Mode Sweep Ims # VBW 300 kHz Mode Sweep | | | | |
| Spuri | ious Emission 30MHz~3GHz | Spurious Emission | on 2GHz~25GHz | | |
| Att 10 dB SWT ●1Pk View | M1[1] 4.95 dbm M1[1] 4.95 dbm M1[1] 2.4700 GHz M2[1] 100 GHZ M2[1] <th>Spectrum Ref Level 20.00 dBm Offset 22.50 dB RBW 100 kF Att 10 dB SWT 230 ms VBW 300 kF ID dBm ID ID ID ID ID ID 0 dBm ID <th< th=""><th>Z 3.21 dm M1[1] 3.21 dm </th></th<></th> | Spectrum Ref Level 20.00 dBm Offset 22.50 dB RBW 100 kF Att 10 dB SWT 230 ms VBW 300 kF ID dBm ID ID ID ID ID ID 0 dBm ID ID <th< th=""><th>Z 3.21 dm M1[1] 3.21 dm </th></th<> | Z 3.21 dm M1[1] 3.21 dm | | |
| Start 30.0 MHz Date: 15.APR.2019 02:31:25 | 501 pts Stop 3.0 GHz | Stort 2.0 GHz 501 | ots Stop 25.0 GHz | | |



| Test Mode : 802.11ac VHT40 | Test Channel : 09 | | |
|--|--|--|--|
| 100kHz PSD reference Level | Channel Plot | | |
| Spectrum With 20 dB Offset 22.50 dB RBW 100 kHz Made Sweep IPk Max Ims VBW 300 kHz Made Sweep 4.83 dBm ID dBm Ims Ims 4.83 dBm 4.469943 GHz ID dBm Ims Ims Ims 4.83 dBm ID dBm Ims Ims Ims 4.83 dBm ID dBm Ims Ims Ims Ims 4.83 dBm ID dBm Ims Ims Ims Ims 4.83 dBm ID dBm Ims Ims Ims Ims Ims Ims ID dBm Ims Ims <t< th=""><th>Spectrum Spectrum Ref Level 20.00 dBm Offset 22.50 dB RBW 100 kH2 1PK 20 dB SWT 8 ms VBW 300 kH2 Mode Sweep 1D dBm </th></t<> | Spectrum Spectrum Ref Level 20.00 dBm Offset 22.50 dB RBW 100 kH2 1PK 20 dB SWT 8 ms VBW 300 kH2 Mode Sweep 1D dBm | | |
| Spurious Emission 30MHz~3GHz | Spurious Emission 2GHz~25GHz | | |
| Spectrum Image: Constraint of the second secon | Spectrum Tro Ref Level 20.00 dBm Offset 22.50 dB = RBW 100 kHz Mode Sweep Att 10 dB SWT 230 ms = VBW 300 kHz Mode Sweep 9 IPk View M1[1] 2.4300 GHz -4.40 dBm 10 dBm M2[1] 6.9010 GHz -4.7.69 dBm 0 dBm 0.9010 GHz 6.9010 GHz -4.00 dBm -0 dBm -0 dBm -0 dBm -0 dBm -0 dBm -0 dBm -0 dBm -0 dBm -0 dBm -0 dBm -0 dBm -0 dBm -0 dBm -0 dBm -0 dBm -0 dBm -0 dBm -0 dBm -0 dBm -0 dBm -0 dBm -0 dBm -0 dBm -0 dBm -0 dBm -0 dBm -0 dBm -0 dBm -0 dBm -0 dBm -0 dBm -0 dBm -0 dBm -0 dBm -0 dBm -70 dBm -0 dBm -0 dBm -0 dBm -0 dBm | | |



Number of TX = 2, Ant. 2 (Measured)





| Test Mode : | 802.11ac VHT20 | Test Channel : 06 | | |
|---|--|---|--|--|
| 100 | kHz PSD reference Level | Channel Plot | | |
| Att 20 dB SWT PIPk Max | t 22.50 db e RBW 100 kHz Mode Swep 1ms e VBW 300 kHz Mode Swep | | | |
| Spuri | ous Emission 30MHz~3GHz | Spurious Emission 2GHz~25GHz | | |
| Att 10 dB SWT ● IPk View 10 dBm 0 dBm -10 dBm -20 dBm -20 dBm -40 dBm | t 22.50 db @ RBW 100 kHz Mode Sweep 29.7 ms @ VBW 300 kHz Mode Sweep M1[1] 11.02 dbm M2[1] 2.43390 GHz -51.64 dbm 2.2870 GHz -51.64 dbm -51.64 dbm -51.64 dbm -51.64 dbm -51.64 dbm -51.64 dbm | Ref Level 20.00 dem Offset 22.50 de @ RBW 100 kHz Att 10 de SWT 230 ms @ VBW 300 kHz Mode Sweep @ IPk View MI[1] 7.86 dBm 10 dBm MI[1] 2.4360 GHz 0 dBm M2[1] -40.48 dBm -20 dBm -19.290 dBm -30 dBm -30 dBm -40 dBm -40 dBm | | |
| -50 dBm -70 dBm -70 dBm Stort 30.0 MHz Date: 14.AFR.2019 23:33:51 | 501 pts Stop 3.0 GHz | 0 dBm 0 dBm <td< td=""></td<> | | |



| Test Mode : 802.11ac VHT20 | Test Channel : 11 | | |
|---|---|--|--|
| 100kHz PSD reference Level | Channel Plot | | |
| Spectrum Offset 22.50 dB @ RBW 100 kHz Mode Sweep 120 dB @WT 1 ms @ VBW 300 kHz Mode Sweep 10 dBm 0.71 2.457013 0 dBm 0 dBm 0.11 2.457013 0 dBm 0.11 2.457013 0.71 0 dBm 0.11 2.457013 0.71 0 dBm 0.11 0.41 0.41 0.41 -10 dBm 0.11 0.41 0.41 0.41 -20 dBm 0.50 dBm 0.40 0.41 0.41 -70 dBm 0.70 dBm 0.70 0.70 dBm 0.70 0.70 Date: 15.APR.2019 00:00:46 0.40 0.40 0.40 0.40 | i GHZ 10 dBm 2.4852000 GHZ 0 dBm 0 dBm 10 dBm | | |
| Spurious Emission 30MHz~3GHz | Spurious Emission 2GHz~25GHz | | |
| Spectrum Ref Lavel 20.00 dBm Offset 22.50 dB RBW 100 kHz Mode Sweep • TPL View 2.4633 | 2.4360 GHz 10 dbm 10 dbm 10 dbm 11 dbm 11 dbm 12 dbm 13 dbm 14 dbm 15 dbm 15 dbm 16 dbm 17 dbm 18 dbm 19 dbm 10 dbm | | |



| Test Mode : 802.11ac VHT40 | Test Channel : 03 | | |
|--|--|--|--|
| 100kHz PSD reference Level | Channel Plot | | |
| Spectrum Image: Spectrum Ref Level 20.00 dBm Offset 22.50 dB RBW 100 HHz Att 20 dB SWT 1 ms VBW 300 HHz Mode Sweep I DHk Max IIII 1.02 dBm 1.02 dBm 1.02 dBm 0 dBm IIII 2.4169943 GHz 1.02 dBm -10 dBm IIII 1.02 dBm 1.02 dBm -30 dBm IIIII 1.02 dBm IIIIII -30 dBm IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII | Spectrum Spectrum Ref Level 20.00 dBm Offset 22.50 dB RBW 100 kHz IPF: Max -37.89 dBm -37.89 dBm -37.89 dBm -37.89 dBm ID dBm -37.89 dBm -37.89 dBm -37.89 dBm -37.89 dBm ID dBm -37.89 dBm -37.89 dBm -37.89 dBm -37.89 dBm ID dBm -37.89 dBm -37.89 dBm -37.89 dBm -37.89 dBm ID dBm | | |
| Spurious Emission 30MHz~3GHz | Spurious Emission 2GHz~25GHz | | |
| Spectrum Image: Constraint of the second secon | Spectrum Image: Constraint of the second secon | | |



| Test Mode : | 802.11ac VHT40 | Test Channel : 06 | | | |
|---|---|--|---|--|--|
| 100 | kHz PSD reference Level | Channel Plot | | | |
| Att 20 dB SWT 1Pk Max 10 dBm | t 22.50 dB = RBW 100 kHz Mode Sweep 1 ms = VBW 300 kHz Mode Sweep 1 ms = VBW 100 kHz M1[1] 4.55 dBm 2.4319993 GHz 4.41 HBM 4.41 HBM 4.41 HBM 4.41 HBM | | | | |
| Spuri | ous Emission 30MHz~3GHz | Spurious Emissio | n 2GHz~25GHz | | |
| Att 10 dB SWT DI dB SWT DI dBm D dBm D dBm D dBm D1 -25.450 dBm -30 dBm -30 dBm -50 dBm | t 22.50 dB @ RBW 100 kHz 29.7 ms @ VBW 300 kHz M1[1] 3.56 dBm M2[1] 1.3.56 dBm 2.2790 GHz -51.80 dBm M2[1] 1.2.2790 GHz M2[1] 2.26190 GHz M2[1] 1.2.26190 GHz M2 -51.80 dBm M3 -51.90 dHz M | Spectrum Ref Level 20.00 dBm Offset 22.50 dB @ RBW 100 kHz Att 10 dB SWT 230 ms VBW 300 kHz ID JD JD <t< th=""><th>Mode Sweep M1[1] 3.46 dbm </th></t<> | Mode Sweep M1[1] 3.46 dbm | | |
| Date: 15.APR.2019 02:36:44 | All providence (Table 1996) | Date: 15.AFR.2019 02:37:09 | | | |



| Test Mode : 802.11ac VHT40 | Test Channel : 09 | | |
|--|--|--|--|
| 100kHz PSD reference Level | Channel Plot | | |
| Spectrum Image: Spectrum Ref Level 20.00 dBm Offset 22.50 dB RBW 100 kHz 4 tt 20 dB SWT 1 ms VBW 300 kHz Mode Sweep • IPk Max • III • 4.62 dBm • 4.62 dBm 10 dBm • 0 dBm • 0 dBm • 0 dBm • 0 dBm -10 dBm • 0 dBm • 0 dBm • 0 dBm • 0 dBm -20 dBm • 0 dBm • 0 dBm • 0 dBm • 0 dBm -20 dBm • 0 dBm • 0 dBm • 0 dBm • 0 dBm -30 dBm • 0 dBm • 0 dBm • 0 dBm • 0 dBm -20 dBm • 0 dBm • 0 dBm • 0 dBm • 0 dBm -20 dBm • 0 dBm • 0 dBm • 0 dBm • 0 dBm -50 dBm • 0 dBm • 0 dBm • 0 dBm • 0 dBm -50 dBm • 0 dBm • 0 dBm • 0 dBm • 0 dBm -50 dBm • 0 dBm • 0 dBm • 0 dBm • 0 dBm -50 dBm • 0 dBm • 0 dBm • 0 dBm <td< th=""><th>Spectrum Production Offset 22.50 dB e RBW 100 kH2 Mode Sweep IPR: Max </th></td<> | Spectrum Production Offset 22.50 dB e RBW 100 kH2 Mode Sweep IPR: Max | | |
| Spurious Emission 30MHz~3GHz | Spurious Emission 2GHz~25GHz | | |
| Spectrum Image: Constraint of the second secon | Spectrum Image: Constraint of the second secon | | |

3.5 Radiated Band Edges and Spurious Emission Measurement

3.5.1 Limit of Radiated band edge and Spurious Emission Measurement

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the limits as below.

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

3.5.2 Measuring Instruments

See list of measuring equipment of this test report.

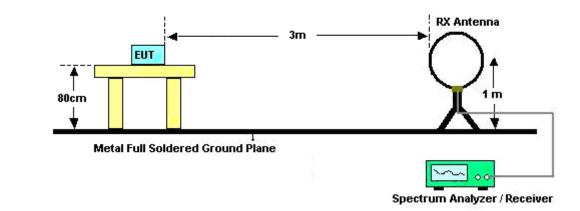
3.5.3 Test Procedures

- 1. The testing follows the ANSI C63.10 Section 11.12.1 Radiated emission measurements
- 2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
- 3. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
- 4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
- 5. Corrected Reading: Antenna Factor + Cable Loss + Read Level Preamp Factor = Level
- 6. For testing below 1GHz, if the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the CISPR quasi-peak method and reported.
- 7. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
- 8. Use the following spectrum analyzer settings:
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Set RBW=100 kHz for f < 1 GHz; VBW ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
 - (3) Set RBW = 1 MHz, VBW= 3MHz for $f \ge 1$ GHz for peak measurement. For average measurement:
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.



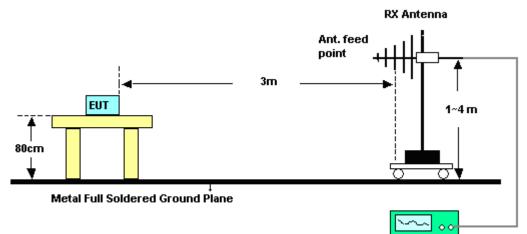
3.5.4 Test Setup

For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz

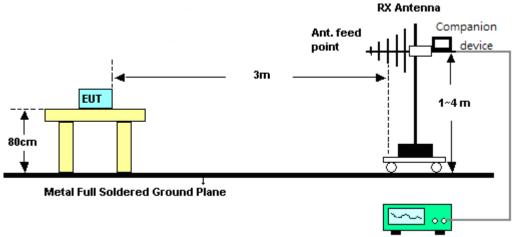
<CDD Mode>



Spectrum Analyzer / Receiver



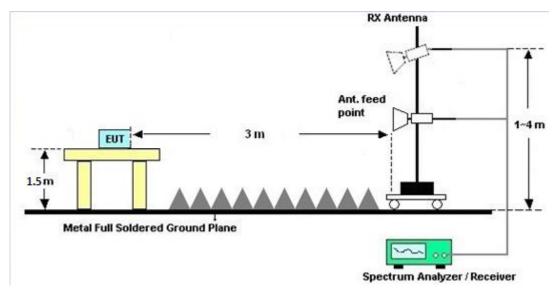
<TXBF Modes>



Spectrum Analyzer / Receiver

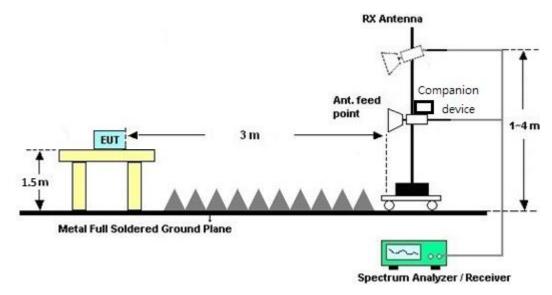
For radiated emissions above 1GHz

<CDD Mode>





<TXBF Modes>



3.5.5 Test Results of Radiated Spurious Emissions (9kHz ~ 30MHz)

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.

3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix C and D.

3.5.7 Duty Cycle

Please refer to Appendix E.

3.5.8 Test Result of Radiated Spurious Emission (30MHz ~ 10th Harmonic)

Please refer to Appendix C and D.



3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

| Frequency of Emission | Conducted I | Conducted Limit (dBµV) | | |
|-----------------------|-------------|------------------------|--|--|
| (MHz) | Quasi-Peak | Average | | |
| 0.15-0.5 | 66 to 56* | 56 to 46* | | |
| 0.5-5 | 56 | 46 | | |
| 5-30 | 60 | 50 | | |

*Decreases with the logarithm of the frequency.

3.6.2 Measuring Instruments

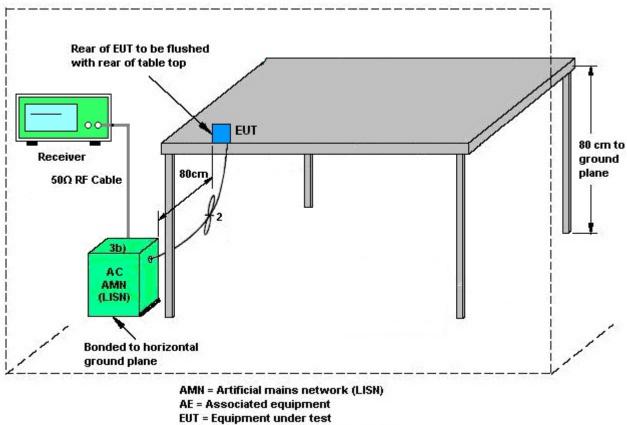
See list of measuring equipment of this test report.

3.6.3 Test Procedures

- 1. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
- 2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- 3. All the support units are connecting to the other LISN.
- 4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- 5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
- 6. Both sides of AC line were checked for maximum conducted interference.
- 7. The frequency range from 150 kHz to 30 MHz was searched.
- 8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF bandwidth = 9kHz) with Maximum Hold Mode.



3.6.4 Test Setup



ISN = Impedance stabilization network

3.6.5 Test Result of AC Conducted Emission

Please refer to Appendix B.

| TEL : 886-3-327-3456 | Page Number | : 72 of 77 |
|--|----------------|----------------|
| FAX : 886-3-328-4978 | Issued Date | : May 07, 2019 |
| Report Template No.: BU5-FR15CWL AC MA Version 2.4 | Report Version | : 01 |



3.7 Antenna Requirements

3.7.1 Standard Applicable

If directional gain of transmitting Antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. The use of a permanently attached Antenna or of an Antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the rule.

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 Antenna Gain

<CDD Modes >

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

For CDD transmissions, directional gain is calculated as

Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.

For power spectral density (PSD) measurements on all devices,

Array Gain = $10 \log(N_{ANT}/N_{SS}=1) dB$.

For power measurements on IEEE 802.11 devices,

Array Gain = 0 dB (i.e., no array gain) for $N_{ANT} \le 4$.

Directional gain may be calculated by using the formulas applicable to equal gain antennas with

GANT set equal to the gain of the antenna having the highest gain;

The EUT supports CDD mode.

For power, the directional gain G_{ANT} is set equal to the antenna having the highest gain, i.e., F)2)f)i).

For PSD, the directional gain calculation is following F)2)f)ii) of KDB 662911 D01 v02r01.

The power and PSD limit should be modified if the directional gain of EUT is over 6 dBi,

The directional gain "DG" is calculated as following table.

| <cdd mod<="" th=""><th>es></th><th></th><th></th><th></th><th></th><th></th></cdd> | es> | | | | | |
|---|--------|--------|-------|-------|-----------|-----------|
| | | | DG | DG | Power | PSD |
| | | | for | for | Limit | Limit |
| | Ant. 1 | Ant. 2 | Power | PSD | Reduction | Reduction |
| | (dBi) | (dBi) | (dBi) | (dBi) | (dB) | (dB) |
| 2.4 GHz | 1.80 | 0.40 | 1.80 | 4.14 | 0.00 | 0.00 |

Power Limit Reduction = DG(Power) - 6dBi, (min = 0)

PSD Limit Reduction = DG(PSD) - 6dBi, (min = 0)